Subscription, $8.00 | PUBLISHED WEEKLY | Single Copies, 25 Cents

VOLUME 125, No. 1
COPYRIGHT, 1944, BY AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago 10, Ill.

MAY 6, 1944

CONTENTS AND SUBJECT INDEX

Clinical Use of Extracts from the Ovaries and of Synthetic Products Having Similar Actions. C. F. Fluhmann, M.D., San Francisco..1
Hormones of the Anterior Lobe of the Pituitary Body. E. H. Rynearson, M.D., Rochester, Minn.....5
Extracts from the Adrenal Cortex. G. W. Thorn, M.D., Baltimore..10
Extracts from the Testes. Willard O. Thompson, M.D., Chicago...15
Convalescent Serum Against Measles. Niels Dungal, M.D., New York..20
Penicillin Therapy of Gonorrhea in Men. Charles Ferguson, M.D., and Maurice Buchholtz, M.D., Staten Island, N. Y.....22
Treatment of Asiatic Cholera with Sulfaguanidine. Joo-se Huang, M.B., Kweilin, Kwangsi, China.....23
Thiouracil in Severe Hyperthyroidism. Elmer C. Bartels, M.D., Boston 24

CLINICAL NOTES

Demonstrating Ova of Enterobius Vermicularis. F. H. von Hofe, M.D., East Orange, N. J.....27
Pancreatitis Complicated by Tetany. William Trevor, M.D., and Lowell Brown, M.D., New York.....27
Penicillin Treatment of Cavernous Sinus Thrombosis. Victor Goodhill, M.D., Los Angeles.....28
Sulfated Oil as a Skin Cleanser in Acne Vulgaris. Jacob H. Swartz, M.D., and Irvin H. Blank, Ph.D., Boston 30

COUNCIL ON PHARMACY AND CHEMISTRY 31

EDITORIALS

The Annual Session.....32
Synthesis of Glycogen.....32
Age and Carcinogenic Effect of Estrogen in Mice.....33

CURRENT COMMENT

The Food and Drugs Commissioner Resigns 34
Intelligence and Conception.....34
Muscle Spasm in Poliomyelitis....35
Fainting During Blood Donation..35
Amylase and Dental Caries.....35

MEDICINE AND THE WAR 36

ORGANIZATION SECTION

Medical Legislation; Woman's Auxiliary; Official Notes.....71

(Subject Index on next page)

THE CHICAGO SESSION
June 12-16, 1944

Official Call.....40
Chicago 42
Headquarters of the American Medical Association.....43
Registration 43
Chicago Hotels and Map.....44
Meeting Places.....45
War Meeting.....45
Entertainment 45
Radio Program.....45
Woman's Auxiliary.....46
Golf Tournament.....46
Preliminary Program of the Scientific Assembly.....47
The Scientific Exhibit.....57
The Technical Exposition.....70

★ ★ ★

Medical Advances in Wartime

The A.M.A. annual meeting in Chicago, June 12-16, offers tremendous opportunities for the medical profession to hear papers presented by leaders in American medicine and to evaluate the new developments and trends in all fields of practice as set forth in both the scientific and technical exhibits.

This great presentation of scientific information is indeed a vital contribution to the more effective practice of medicine—a fact recognized by doctors from all over the country who eagerly anticipate these annual meetings with full realization of their great significance to the modern doctor—especially in wartime.

That good medical books have much in common with these meetings is very evident. Both foster the teaching and application of the new and approved methods, the safe and effective use of new drugs and new technics, etc. Both broaden the viewpoint of the individual, bring him in contact with the practical experience of the leaders in his field and enable him to serve mankind even more efficiently and objectively.

And just as these meetings are devoted to the dissemination of vital data on the progress of medicine, so it is the constant aim of Saunders to publish medical books measuring up to the same high standards. You are cordially invited, therefore, to visit Booths 257-258 (ballroom) while in Chicago where you may examine our new books.

See also SAUNDERS ANNOUNCEMENT on Pages 3, 4, 5

A. M. A. Chicago session.....E-32; 40
Army and Navy Exhibits.....58
chemotherapy, panel discussion.....47
Chicago, (description) 42; (hotels; maps).44
conference on heart disease.....59
conference on rheumatic fever.....59
dinners.....45
entertainment, 45; (Woman's Auxiliary)..46
exhibit on burns.....57
exhibit on chemotherapy and infectious diseases.....58
exhibit on fractures.....57
exhibit on rehabilitation.....58
exhibit on tropical medicine.....59
fellowship, who are eligible.....43
golf tournament.....46
headquarters.....42; 43
hotels.....44
House of Delegates, (members, list of) 40; (registration) 44; (dinner; luncheon).45
luncheons.....45
meeting places.....45
motion pictures.....68
neuropsychiatry, panel discussion.....47
Officers, (list of) 41; (registration).....44
official call.....40
Opening General Meeting.....45
panel discussions.....47
program.....47
radio program.....45
registration, when and where.....40, 43
Scientific Assembly.....47
Scientific Exhibit, (outline of) 57; (awards).70
section (delegates) 41; (meeting places) 45; (programs) 47; (exhibits).....60
Section on Anesthesiology, (program) 56; (exhibit).....67
Section on Dermatology and Syphilology, (program) 52; (exhibit).....65
Section on Experimental Medicine and Therapeutics, (symposium) *1-*15; (program) 51; (exhibit).....63
Section on Gastro-enterology and Proctology, (program) 54; (exhibit).....67
Section on Laryngology, Otology and Rhinology, (program) 50; (exhibit)....62
Section on Miscellaneous Topics, (program).....56
Section on Nervous and Mental Diseases, (program) 52; (exhibit).....65
Section on Obstetrics and Gynecology, (program) 49; (exhibit).....62
Section on Ophthalmology, (program) 49; (exhibit).....62
Section on Orthopedic Surgery, (program) 54; (exhibit).....67
Section on Pathology and Physiology, (program) 51; (exhibit).....64
Section on Pediatrics, (program) 50; (exhibit).....63
Section on Practice of Medicine, (program) 47; (exhibit).....60
Section on Preventive and Industrial Medicine and Public Health, (program) 53; (exhibit).....65
Section on Radiology, (program) 55; (exhibit).....67
Section on Surgery, General and Abdominal, (program) 48; (exhibit).....61
Section on Urology, (program) 53; (exhibit).....66
Sessions for General Practitioner, (program).....56
Technical Exposition.....70
tropical medicine, (panel discussion) 47; (exhibits).....59
War Meeting.....45
Wartime Graduate Medical Meetings....59
Woman's Auxiliary.....46
Abdomen pain, ergotamine in.....92
Abortion, pranone and progesterone for....*4
Acne vulgaris from androgens.....*19
vulgaris, liver extract in.....ab-85
vulgaris, sulfated oil for.....*30
Addison's Disease.....*11
Adrenal cortex extracts, clinical use.....*10
Age, estrogens and carcinogenesis.....E-33
American Medical Golfing Association.....46
Amylase, salivary, and caries.....E-35
Androgens.....*15; *17; *19
Anesthesia, caudal, continuous.....ab-88; ab-89
spinal, effect on muscle spasm in poliomyelitis.....E-35
spinal, needle injures intervertebral disk...92
Antihormones.....*9
Aorta, abdominal tenderness.....92
Association News.....40
Aviation, aerodontalgia.....ab-86
evacuate 173,000 casualties.....37
flight surgeons' assistants.....37
Bagassosis.....ab-87
Bauchspies, R. L., Legion of Merit.....37
Blood calcium in pancreatitis with tetany..*27
donation, fainting during.....E-35
tests to identify infants.....92
Board Examinations.....83
Book Notices.....91
Books Received.....**Adv. Page 83**
Breast cancer, age and estrogens.....E-33
Bureau of Investigation.....81
Bureau of Legal Medicine and Legislation....83
Burns and scalds in children.....ab-90
Calcium gluconate in pancreatitis.....*27
Campbell, W. C., tribute to.....E-34
Cancer, age and estrogens.....E-33
in diabetics.....ab-88
Cashew nut oil.....92
Cavernous Sinus thrombosis, penicillin for.*28
Chewing gum fever.....ab-85
Children, winter vs. summer.....E-34
China, train medical aides.....38
Cholera, Asiatic, sulfaguanidine for.....*23
Climacteric, testosterone for.....*18
Correspondence.....82
Council on Pharmacy and Chemistry.....31
Deaths.....78
Degerm, use of term.....C-82
Desoxycorticosterone.....*10
Diabetes Mellitus, cancer in.....ab-88
Dicoumarin for thrombosis.....ab-87
Diethylstilbestrol.....*2; *19
Dispensary serves troops abroad.....36
Dunbar, P. B., tribute to.....E-34
Editorials.....32
Endocrinology, practical aspects.....*1-*15
Ergotamine for abdominal pain.....92
β-Erythroidine for muscle spasm in poliomyelitis.....E-35
Estrogens, age and carcinogenic effect....E-33
treatment.....*1
Eunuchism, testosterone for.....*17
Eyes, muscle paralysis from stab wound.....92
Food and Drug Administration.....E-34
Foreign Letters.....76
Fruits, Brazilian, vitamin C in.....77
Gastrointestinal x-ray study and smoking..C-82
Glycogen synthesis in test tube.....E-32
Gonadotropins.....*7; *16
Gonads, secondary hypogonadism.....*17
Gonorrhea, penicillin for.....*22
Growth hormone of anterior pituitary.....*5
testosterone influence on.....*18
Hand infections, penicillin for.....ab-90
Health, public, under Hitler.....39
Heat treatment of shock.....ab-90
Heparin no avail in cavernous sinus thrombosis.....*28
Hernia, esophageal hiatal.....ab-89
Homeopath and war service.....76
Hospitals needing interns and residents....38
ship: John L. Clem.....36
17-Hydroxycorticosterone, clinical.....*10
Hygeia contest winners.....71
Hyperthyroidism, severe, thiouracil for....*24
Iceland, measles epidemic.....*20
Impotence, testosterone for.....*18
Industrial bagassosis.....ab-87
dermatosis from cashew nut oil.....92
Infants, blood tests to identify.....92
Intelligence and season of birth.....E-34
Jaundice after yellow fever vaccine.....ab-88
Jeep disease.....ab-89
Keratoconjunctivitis, epidemic.....ab-86
Kho-sheng-Lim, R., China's medical aides....38
Lactation, hormone.....*8
Legislation, Medical.....71
Leprosy, campaign against, Brazil.....77
Liver extract in acne.....ab-85
Malpractice: hospital physician; liability. MI-83
Marking nut, Indian.....92
Marriages.....77
Matthews, T. O., Legion of Merit.....37
Measles epidemic, convalescent serum in....*20
Meat, nutritive value.....ab-87
Medical Examinations and Licensure.....83
Medicine and the War.....36
flight surgeon's assistants.....37
hospitals needing interns and residents.....38
physical therapy equipment.....39
physicians, communities needing.....39
primary atypical pneumonia.....ab-85
tissue pathology in Army.....36
U. S. Cadet Nurse Corps.....39
vitamin A national deficit.....39
Medicolegal Abstracts.....83
Meetings, Coming Meetings.....84
Menstruation onset and body temperature..C-82
Mercury, toxic reactions of diuretics.....ab-85
Metabolism, basal, and thiouracil.....*24
Migraine, abdominal.....92
Muscle spasm in poliomyelitis.....E-35
Myxedema, pituitary.....*12
Nerve blocking in poliomyelitis.....E-35
New and Nonofficial Remedies.....81
News.....72
Nutrition deficient in occupied Europe.....76
quality of beef and pork proteins.....ab-87
Obesity, amphetamine and propadrine for..ab-87
Organization Section.....40
Ovary extracts, clinical use.....*1
Ovulation and basal temperature.....C-82
Oxyuriasis, scotch tape technic.....*27
Pancreatitis, acute, with tetany; calcium gluconate and parathyroid injection for.....*27
Penicillin for cavernous sinus thrombosis...*28
for civilian use.....38
for gonorrhea in men.....*22
for hand infections.....ab-90
production, Brazil.....77
Phosphorylase, glycogen synthesis.....E-32
Physical Therapy equipment, restrictions.....39
Physicians, communities needing.....39
Dutch, in Germany: acute shortage,.....39
Pilonidal disease, jeep disease.....ab-89
Pituitary, anterior, clinical use.....*5; *15
insufficiency and hypogonadism.....*17
myxedema.....*12
Pneumonia, atypical primary, in soldiers...ab-85
Poliomyelitis, muscle spasm in, nerve blocking for.....E-35
Pregnancy, splenectomy in purpura.....C-82
test: temperature graphs.....C-82
Progestin.....*4
Prostate, cancer, diethylstilbestrol for.....*19
Purpura, thrombopenic hemorrhagic, splenectomy in.....C-82
Queries and Minor Notes.....92
Radio Broadcasts.....45; 71
Relaxin.....ab-86
Retina, glioma, radon for.....76
Roentgenography, no smoking before.....C-82
Saliva, amylase and dental caries.....E-35
Sauer, P. K., Legion of Merit to.....37
Scotch tape technic for Enterobius ova.....*27
Serum, convalescent, use in measles.....*20
Shock treatment, heat in.....ab-90
Skin cleanser: sulfated oil for acne.....*30
Smith, H. C., Jr., wins citation.....37
Society Proceedings.....84
Spine, needle injures intervertebral disk.....92
Splenectomy in pregnancy.....C-82
State Board Examinations.....83
Sterility, androgens for.....*19
Stomach, hernia through diaphragm.....ab-89
roentgen study, no smoking before.....C-82
Strabismus, orthoptics for squinters.....ab-86
Sulfaguanidine for Asiatic cholera.....*23
Sulfated oil for acne vulgaris.....*30
Sulfathiazole no avail in cavernous sinus thrombosis.....*28
Surgeons assistants, flight.....37
Syncope during blood donation.....E-35
Teeth, aerodontalgia.....ab-86
caries and salivary amylase.....E-35
Temperature, Body, and ovulation.....C-82
Testis extracts, clinical use.....*15
undescended, chorionic gonadotropin for...*16
Tetany in acute pancreatitis.....*27
Thiouracil in hyperthyroidism.....*24
Thrombosis, cavernous sinus, penicillin for..*28
dicumarol for.....ab-87
Thyroid stimulating hormone.....*6
Tissue pathology in U. S. Army.....36
Tobacco smoking and roentgenography.....C-82
Tonics and Sedatives.....**Adv. Page 64**
Trichomonas vaginalis vaginitis.....36
Tuberculosis and trauma.....MI-83
Uterus cancer and estrogens.....E-33
hemorrhage, ovarian extracts for.....*1
Vagina cancer and estrogens.....E-33
Vitamin A deficit, nation faces.....39
C in Brazilian fruits.....77
Waterhouse-Friderichsen syndrome.....*12
Whooping Cough, serotherapy.....ab-89
Woman's Auxiliary.....46; 71
World War II, clinical conference at Oran..37
dispensary serves U. S. troops.....36
heroes: Bauchspies (R. L.).....37
heroes: Matthews (T. O.).....37
heroes: Sauer (P. K.).....37
heroes: Smith (H. C., Jr.).....37
homeopath and war service.....76
jeep disease.....ab-89
malnutrition in occupied Europe.....76
173,000 casualties evacuated by aircraft....37
public health under Hitler's rule.....39
training China's medical aides.....38
Wounds, sensory effect.....ab-90
stab, ocular muscle paralysis from.....92
Yellow Fever vaccine, jaundice after.....ab-88

THE JOURNAL of the American Medical Association is published weekly by the American Medical Association, 535 North Dearborn Street Chicago 10, Ill. Subscription price, $8.00 a year. 25c a copy. Canadian $9.50. Foreign $12.00. Entered as second class matter June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879.

BOOK BUYING SIMPLIFIED

We supply new and standard medical works of all publishers
ONE ORDER—ONE REMITTANCE
GET OUR LATEST BULLETIN
CHICAGO MEDICAL BOOK CO. 438 S. Honore St. CHICAGO 12

Medical
Coy. 1

The Journal of the
American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 125, No. 1 CHICAGO, ILLINOIS MAY 6, 1944
COPYRIGHT, 1944, BY AMERICAN MEDICAL ASSOCIATION

CLINICAL USE OF EXTRACTS FROM THE OVARIES

AND OF SYNTHETIC PRODUCTS HAVING SIMILAR ACTIONS

C. F. FLUHMANN, M.D.
SAN FRANCISCO

The original concept of the ovary as an endocrine gland which may produce various clinical syndromes due to increased or decreased formation of some basic secretion was a very simple explanation of abnormal function. However, the advances of the past few years have shown that the problem is much more complicated, since many active biologic substances are concerned. They may be considered as falling into two main groups. First are the estrogens, or estrogenic substances, and second progestin or corpus luteum derivatives.

A. ESTROGENIC SUBSTANCES

The estrogens are chiefly concerned with the maintenance of the female accessory genital organs. Their production is not limited to the gonads, and various forms are found widely distributed in nature. They occur in both males and females and it is possible that some of these substances are produced by the adrenal glands. Under physiologic and experimental conditions they promote growth of the endometrium, the vaginal mucosa, the mammary gland ducts and various general metabolic changes such as retention of nitrogen, sodium chloride and water.

Preparations.—Estrogenic hormones are found on the market under a bewildering array of proprietary names and variegated preparations. Their employment offers a real problem to the conscientious physician wishing to determine the indications for their usage, the type of product he should recommend, the correct dosage and the method of administration.

The estrogenic substances normally found in the human being are chiefly three sterols, namely estrone, estriol and estradiol. Commercial preparations are composed of these hormones or of derivatives such as alpha-estradiol benzoate or alpha-estradiol dipropionate. They are generally available in pure chemical form, but a few products are mixtures of several estrogens.

The question of dosage is very confusing. Many potent preparations are available and are effective clinically if sufficient amounts are administered. There are many difficulties in assaying their estrogenic activity, and it is not possible to compare either one hormone with another or the product of one manufacturer with that of a competitor.[1] Among the handicaps are problems of varying sensitivities among colonies and species of test animals, differences resulting from methods of administration, variations in rates of absorption of different compounds, and the lack of a standard which can be applied to all estrogens singly or in mixtures.

The only international standards which have been adopted are for estrone and alpha-estradiol benzoate, and in each case 1.0 mg. of the pure crystalline substance is said to contain 10,000 international units. In spite of this, however, there is a great variation in the estimates made by different observers. There are no biologic standards for the other estrogens, although a commendable advance has been made where the purified hormone is offered in terms of weight. In this case it is important again to draw attention to the fact that the activity of one substance should not be compared directly with that of another on the basis of equivalent weights.

The accompanying table gives the names of some preparations, together with their methods of administration and the range of the single dosages which are in general clinical usage.

Attention has been directed in recent years to a number of substances which are not chemically related to the natural estrogens but which are endowed with estrogenic activity. One of these, diethylstilbestrol, or 4, 4′-dihydroxy-alpha: beta-diethylstilbene, has been released for sale in this country by the Food and Drug Administration. It is generally referred to as "stilbestrol," but strictly speaking this is incorrect, as stilbestrol is the "mother substance" from which diethylstilbestrol is derived.[2] Its estrogenic potency is very high; it is effective when given orally, by hypodermic injection or by local application, and it has the virtue of being inexpensive as compared with the natural estrogens. There are some serious objections to its employment, however, as described later, and other synthetic drugs have been, and probably will continue to be, developed in order to overcome this handicap. One of these is hexestrol, or dihydrodiethylstilbestrol, which, although about one-fifth as effective as stilbestrol, is reputed to produce active clinical results when sufficient dosages are employed.[3]

Methods of Administration.—The estrogens may be administered effectively in a number of ways, and a careful choice of the method, according to the clinical indications for their employment, may be important.

1. The estrogens are effective by mouth but must be given in larger doses than when given by injection. Estriol or stilbestrol are the preparations of choice for

From the Department of Obstetrics and Gynecology, Stanford University School of Medicine.

This paper, in a symposium on "The Practical Aspects of Endocrinology," is published under the auspices of the Section on Experimental Medicine and Therapeutics.

1. Freed, S. C.: Present Status of Commercial Endocrine Preparations, J. A. M. A. **117**: 1175 (Oct. 4) 1941.
2. Designations "Stilbestrol" and "Diethylstilbestrol" for Synthetic Estrogen 4: 4′-Dihydroxystilbene and Its Diethyl Derivative, report of the Council on Pharmacy and Chemistry, J. A. M. A. **117**: 1625 (Nov. 8) 1941.
3. Bishop, P. M. F.; Bowes, R. K.; Boycott, M.; Kellar, R.; MacGregor, T. N., and Murless, B. C.: Lancet **1**: 629, 1940.

oral administration. This method is desirable in treating patients with mild climacteric symptoms, some children with vulvovaginitis, men with prostatic carcinoma, for the suppression of lactation, and under some circumstances when it is not possible to employ hypodermic injections.

2. Since most of the available preparations are made up in oil, they are best given by intramuscular injection, especially when it is desirable to employ large dosages. It is claimed that estradiol dipropionate given in this manner is more slowly absorbed and has a more lasting effect than preparations of estrone or estradiol benzoate. On the other hand, when a rapid effect is desired estrone is preferable.

Estrogenic Hormones

Estrogen	Method of Administration	Range of Single Doses	Examples of Commercial Preparations
Estrone.....	Intramuscular	1,000 to 50,000 I. U. (0.1 to 5.0 mg.)	Estrone (Abbott) Estrone (Lilly) Theelin (Parke, Davis)
	Suppositories	1,000 to 2,000 I. U. (0.1 to 0.2 mg.)	Estrone (Lilly) Theelin (Parke, Davis)
Estrone.....	Intramuscular (crystals)	20,000 I. U. (2.0 mg.)	Theelin aqueous suspension (Parke, Davis)
Sodium estrone sulfate	Oral	1.25 to 3.75 mg.	Premarin (Ayerst, McKenna & Harrison)
Estriol.....	Oral	0.06 to 0.24 mg.	Emmenin (Ayerst, McKenna & Harrison) Estriol (Abbott) Estriol (Lilly)
Alpha-estradiol	Oral	0.1 to 0.5 mg.	Di-Menformon (Roche-Organon) Ovocylin (Ciba) Progynon-DH (Schering)
	Suppositories	0.04 to 0.4 mg.	Ovocylin (Ciba) Progynon-DH (Schering)
	Topical	.....	Ovocylin (Ciba) Progynon-DH (Schering)
Alpha-estradiol benzoate	Intramuscular	0.083 to 1.66 mg.	Ben-Ovocylin (Ciba) Di-Menformon (Roche-Organon) Progynon-B (Schering)
Alpha-estradiol dipropionate	Intramuscular	0.1 to 0.5 mg.	Di-Ovocylin (Ciba) Progynon-DP (Schering)
Ethinyl estradiol	Oral	0.05 to 0.15 mg.	
Estrogenic substances	Intramuscular	.....	Amniotin (Squibb)
	Oral	.....	Estrogenic hormones (Upjohn)
	Suppositories	.....	Estrogenic substances (Reed & Carnrick) Follacro (Schieffelin) Menformon (Roche-Organon)
Stilbestrol	Oral	0.1 to 5.0 mg.	
Hexestrol	Oral	0.2 to 3.0 mg.	Hexestrol (Merrell)

3. Solutions of estrogenic hormone are absorbed through the skin and mucosal surfaces. They produce not only a systemic effect but also an intensified local stimulus when employed in this manner. For this reason it is the preferable method of administration (suppositories or ointment) in the treatment of atrophic changes of the vulva and vagina of postmenopausal women and of vulvovaginitis in children.

Three other methods of administration, still under experimental observation, bid fair to change some of our procedures in patients requiring estrogenic hormone: 1. Estrogenic hormones in pure crystalline form are compressed into small pellets which are placed deep in subcutaneous tissues. They are absorbed slowly and exert a continuous estrogenic action for weeks or even months.[4] 2. In some instances the pellets become surrounded by a protective coat of fibrous tissue and cease functioning before complete absorption has occurred. There is some evidence that this disadvantage may be overcome by employing injections of an aqueous suspension of crystals of the pure hormone.[5] The water rapidly disappears, and the disseminated crystals act in the same manner as the pellets. 3. The sublingual absorption of concentrated solutions of estrogen in propylene glycol is an apparently efficient method of administration. In this case a few drops of the hormone are placed under the tongue on each side of the frenulum, from which it is rapidly absorbed.[6]

Adverse Effects.—The large dosages of estrogen recommended by various authors have given rise to fears of possible secondary adverse effects. There is no evidence that they lead to any permanent harm, however, provided they are used for limited periods and in therapeutic doses. If any danger exists it is much more likely to be from their use over a long time rather than from large amounts given for a short time.

If estrogenic hormones are used in the first half of the menstrual cycle they may interfere with normal ovulation, resulting in a subsequent anovulatory flow or a delay in the appearance of the menses. In amenorrheic or postmenopausal women they may lead to abnormal uterine bleeding which may cause alarm and suggest the existence of a carcinoma of the fundus. This complication is especially prone to occur with stilbestrol. It always calls for a thorough investigation, especially the employment of endometrial biopsy.

Experimental studies with rodents have shown that under certain conditions estrogenic substances have carcinogenic properties. For this reason, fear has been expressed that their use in women may have an important influence on the development of malignant tumors. However, conditions in man are very different from those in experimental animals, and there is little reason to believe that any serious danger really exists in the employment of estrogen in therapeutic dosages for short periods of time.

As mentioned previously, a serious objection to the use of stilbestrol is that it may produce disagreeable symptoms, consisting chiefly of nausea and vomiting but at times of vertigo and headache also. Their incidence has been placed by different authors at from 5 to 80 per cent of all patients, and they occur whether the drug is taken orally or by injection, but no evidence has been adduced showing that they result from damage to any vital organs. It is said that they are not prone to occur in pregnant women or post partum, but this is not infallible. Two procedures have been advocated to offset their occurrence. First, a small dose, such as 0.1 mg. orally, is employed at the beginning of treatment and this is gradually increased to the effective therapeutic level. Second, the patient is instructed to take the medicine at bedtime instead of during the waking hours.

Clinical Indications.—The estrogenic hormones have been recommended for many conditions, but the most favorable results have occurred in the treatment of climacteric symptoms, gonorrheal vulvovaginitis in children, senile vaginitis and for the suppression of lactation, and recent studies suggest that they may have a desirable effect in the care of men with carcinoma of the prostate.

4. Deanesley, R., and Parkes, A. S.: Proc. Roy. Soc., London, s. B **134**: 279, 1937. Bishop, P. M. F.: Brit. M. J. **1**: 939, 1938.

5. Salmon, U. J.; Geist, S. H., and Walter, R. I.: Treatment of Menopause: Evaluation of Estrogen Implantation, J. A. M. A. **117**: 1843 (Nov. 29) 1941.

6. Salmon, U. J., and Geist, S. H.: Proc. Soc. Exper. Biol. & Med. **45**: 766, 1940.

The most useful and successful application of the estrogenic hormones is found in the treatment of the vasomotor and nervous symptoms of the climacteric or following castration. Although many suggestions have been made regarding the correct method of administration, it appears that three methods, with or without minor modifications, have received especial attention:

First, the employment of small dosages administered daily by mouth, or by injection two or three times a week, and continued for long periods. In the hands of many observers this has proved a satisfactory plan, but it is hard to determine whether the success of this therapy is from an actual endocrine effect or whether it is purely suggestive treatment.[7] It is well known also that favorable results have been obtained in mild cases by employing biologically inert ovarian substance or mild sedatives.

Second, the patient is given large amounts of estrogenic hormone for a short period, followed by either oral or parenteral treatment in comparatively small dosages with the idea of securing a "maintenance level." This concept undoubtedly is based on a method of treating hypothyroid disorders by substitution with the glandular substance, but it ignores the fact that ovarian deficiencies cannot be considered in the same light. The prolonged continuation of estrogens may prove harmful, although there is no factual evidence for this statement. Some authors also feel that this type of treatment may interfere with the normal endocrine adjustment of the climacteric epoch and unnecessarily lengthen the duration of the vasomotor and nervous manifestations.

Third, very large doses of estrogens (for example, estrone 10,000 to 20,000 international units, estradiol benzoate 1.5 mg., estradiol dipropionate 2.5 mg.) repeated three to eight times at three to six day intervals for two or three weeks. This procedure overcomes some of the objections to the other methods, although the relief may endure for only a limited period. When this occurs, a new course of therapy becomes necessary but smaller dosages may be employed and freedom from symptoms lasts longer.

The treatment of gonorrheal vulvovaginitis in children is successfully carried out by the use of suppositories containing approximately 1,000 international units of estrogenic hormone. They are introduced daily at home, and the progress of the patient is determined by weekly vaginal smears. It may be necessary to prolong the course of therapy over several weeks, but negative smears usually are obtained in about three weeks. In very young children, and whenever it is not considered desirable to employ suppositories, the estrogens may be given orally (estriol 0.06 mg. daily, stilbestrol 0.1 mg. daily).

The atrophic changes of the vulva and vagina which follow castration or the menopause may produce very distressing symptoms, such as vaginal discharge, slight bleeding, pruritus vulvae, dysuria and dyspareunia. The daily insertion of estrogenic suppositories (estrone 2,000 international units or 0.2 mg., stilbestrol 0.5 mg.) may bring relief within a few days, but it is often necessary subsequently to repeat the treatment. At times the external application of an ointment containing estrogenic substances may prove a valuable adjunct.

The estrogens may be employed as an aid to suppress mammary gland function when it is desirable to inhibit or discontinue lactation. Its chief action is to diminish local congestion and is of some value in the treatment of acute mastitis. Stilbestrol is generally used at dosages of 5.0 mg. every four hours for from three to five days. It is not unusual to observe a return of milk production a few days after the drug has been discontinued.

In the past two or three years considerable attention has been directed to the employment of estrogens for the treatment of patients with carcinoma of the prostate.[8] There is still some discussion as to whether they should be used as the sole therapeutic agent or as an adjunct to castration, but some authorities believe they should be reserved for advanced cases in which operative procedures are contraindicated, or as a palliative measure to control distressing postcastration symptoms. Stilbestrol generally has been employed at a daily dosage of 3 to 10 mg. for a period of three to four weeks, after which it is decreased to 1 to 3 mg.

With the other indications advanced for the clinical usage of estrogenic hormones, one enters on less certain ground. The exact reasons for their employment are not always very clear and in some instances are definite abuses of endocrine therapy which well may bring discredit to the whole field.[9] There are many spontaneous recoveries which can be wrongly accredited to the therapy, and, above all, a favorable influence often may be attributed to a psychotherapeutic effect. In this category, therefore, the value of estrogenic therapy should be regarded as still undetermined.[10] However, several conditions deserve special consideration, namely amenorrhea, intrinsic dysmenorrhea, functional uterine bleeding, periodic mastalgia and the induction of labor.

The employment of estrogenic hormone for most cases of functional amenorrhea is not based on sound physiologic principles. The amenorrhea usually results from deficient ovarian function, and this hormone cannot stimulate the gonads. It is merely substitutive therapy, and although uterine bleeding may be produced easily it is not true menstruation but an abnormal flow which does not necessarily recur in the months following cessation of the treatment. However, in many instances of amenorrhea of short duration a single injection of estrogenic hormone (for example, estrone 20,000 international units, estradiol benzoate 1.5 mg.) may lead to a period of uterine bleeding within a few days. Since the hormone given in this manner does not interfere with a normal pregnancy, the procedure may serve to differentiate between early gestation and "delayed menses" or functional amenorrhea.

The results obtained in the treatment of primary dysmenorrhea direct especial attention to the use of estrogen in some cases, although the difficulty of evaluating the results makes one hesitate to accept them without reservation. The reason for employing these substances is based on the observation that periodic bleeding in hyperplasia endometrii is usually painless, and it also is believed by several authors that estrogen may help to overcome the uterine hypoplasia which often accompanies dysmenorrhea. The estrogen is employed in daily oral dosages of 100 to 500 international units over periods of three months or more, or in larger doses given intramuscularly during the first

7. Pratt, J. P., and Thomas, W. L.: Endocrine Treatment of Menopausal Phenomena, J. A. M. A. **109:** 1875 (Dec. 4) 1937.

8. Huggins, C.; Scott, W. W., and Hodges, C. V.: J. Urol. **46:** 997, 1941. Herbst, W. P.: Biochemical Therapeusis in Carcinoma of Prostate Gland: Preliminary Report, J. A. M. A. **120:** 1116 (Dec. 5) 1942. Kearns, W. M.: Wisconsin M. J. **41:** 575, 1942. Dean, A. L.; Woodard, H. Q., and Twombly, G. H.: J. Urol. **49:** 108, 1943.

9. Fluhmann, C. F.: California & West. Med. **56:** 345, 1942.

10. The use of estrogenic hormone has been recommended for oligomenorrhea, migraine headaches, vomiting of pregnancy, toxemias of late pregnancy, acne, hirsutism, frigidity, climacteric hypertension and arthropathia ovaripriva.

two weeks of the menstrual cycle. Some of the favorable results obtained in the latter group are probably due to an interference with ovulation producing an "anovulatory menstruation." In most instances there is a rapid return of the symptoms following the cessation of treatment.

The estrogens have been employed for the control of various types of functional uterine bleeding, especially in younger persons. The exact mechanism by which this is brought about is not quite clear, and permanent relief is not always obtained. Although the natural estrogens in high doses may be used successfully, stilbestrol has been generally recommended at daily doses varying from 2 to 5, and even as high as 15 mg. The hormone is continued until cessation of the bleeding and may be repeated at cyclic intervals.

The condition of periodic mastalgia, or painful breasts, during the premenstruum has received considerable attention, and estrogenic hormones have been highly recommended as an effective method of therapy. It is necessary to postpone final judgment, however, since good results have been reported from biologically inert ovarian substance as well as ridiculously small amounts of potent estrogenic hormone. It is difficult to conceive that such a procedure can have a true endocrine effect. A number of investigators advocate the employment of as much as 100,000 international units of estrone weekly for a period of three months in an attempt to produce an artificial inhibition of the anterior lobe hyperfunction, which they believe is the causal factor.

As an aid in cases of uterine inertia, estrogens alone have not proved of great value in most instances,[11] but since they sensitize the uterus so that it responds more actively to stimulation by oxytocics they have been employed as a preliminary step in the induction of labor.[12] They are given the preceding day in large doses in one of the preparations which is more quickly absorbed (for example, estrone 50,000 international units, estradiol benzoate 3.0 mg. or stilbestrol 100 to 200 mg. orally). During the actual induction the following day the initial dose of posterior pituitary injection should not exceed 1 or 2 minims (0.06 to 0.12 cc.) in order to determine the degree of uterine reactivity which has resulted.

B. PROGESTIN

The term "progestin" refers to pure crystalline substances or to impure extracts which have the same biologic effect as "progesterone," the purified product of the corpus luteum. It is a hormone which is solely concerned with reproduction and is unique among the endocrine glands, as it is produced only at cyclic intervals and during gestation. During the second half of the menstrual cycle it induces the qualitative changes which prepare the endometrium for the nidation of the ovum. It is also manufactured by the placenta, and its effect continues throughout the duration of pregnancy. Another important action of this substance is the inhibiting or diminishing of uterine contractions.

Preparations.—Progesterone is now available for clinical use in pure chemical form. It may be obtained by extraction of corpora lutea, or it may be a synthetic preparation from one of the vegetable sterols, notably stigmasterol. In addition there are incompletely purified extracts which may be considered as "progestin," since they contain varying amounts of the hormone. They are not effective orally and are offered in an oily solution for intramuscular injection.

Considerable difficulty was experienced at one time in defining the dosage of progestin or progesterone, because several kinds of "units," based on different laboratory procedures, were employed. However, in 1935 a committee of the League of Nations adopted an "international unit" which has greatly simplified the problem. This unit is defined as the progestational activity contained in 1 mg. of progesterone and is determined with suitably prepared rabbits.

A derivative of testosterone, pregneninolone, has been found to possess the ability to induce progestational changes in women and in experimental animals. It has the distinct advantage of being effective by oral administration but must be given in from five to ten times the equivalent dosage by weight of progesterone. It is manufactured in this country by the Schering Corporation under the name of "pranone." In 1941 the Council on Pharmacy and Chemistry [13] felt that clinical results with this substance were still too inconclusive for its acceptance, but several favorable reports on its use have been published.

Indications.—The main indications for the clinical use of progestin are based on its biologic characteristics, but the difficulty of interpreting the results in conclusive terms makes one feel that the problem is still in the experimental stage. Nevertheless, numerous favorable reports direct attention to its judicious employment in cases of habitual or threatened abortion, certain types of functional uterine bleeding, "after-pains" and dysmenorrhea.[14]

The employment of progestin for women who repeatedly abort during early pregnancy is based on the fact that the corpus luteum is necessary for the implantation and early development of the ovum. It is therefore believed that in some instances the repeated interruption of pregnancy is due to insufficient production of progesterone, an observation which is supported by studies on pregnandiol, the excretory product of this hormone.[15] In such cases the administration of the hormone (progesterone 1 to 5 mg. daily, pranone 10 to 30 mg.) should be started as early as possible and continued until the fourth month of gestation, when the placenta is believed to become active in its production. Needless to say, the high cost of the available products is a serious obstacle to this type of therapy.

The reasons for employing progestin in cases of threatened abortion are the same as for habitual abortion, with the additional possibility that it may have a favorable influence by diminishing or inhibiting uterine contractions. When cramps and bleeding are present larger daily doses, such as 5 to 10 mg. of progesterone or 30 to 40 mg. of pranone, should be employed. After subsidence of the symptoms the daily dose should be diminished to progesterone 1 to 5 mg. or pranone 5 to 10 mg. and continued until the fourth month of gestation.

A large proportion of cases of so-called functional uterine bleeding is due to the endocrine disturbance generally referred to as "hyperplasia of the endometrium," which results from an overactivity of estrogen in the absence of corpus luteum function. In such

11. Jeffcoate, T. N. A.: J. Obst. & Gynaec. Brit. Emp. **46**: 893, 1938.
12. Abarbanel, R.: Surg., Gynec. & Obst. **73**: 257, 1941.
13. Pregneninolone and Pranone, report of the Council on Pharmacy and Chemistry, J. A. M. A. **116**: 1054 (March 15) 1941.
14. On the other hand, the claims for its therapeutic efficiency based on actual endocrine effects in such conditions as pernicious vomiting of pregnancy, amenorrhea and premenstrual tension should be viewed with many reservations.
15. Browne, J. S. L.; Henry, J. S., and Venning, E. H.: Am. J. Obst. & Gynec. **38**: 927, 1939.

cases progestin is valuable in controlling the bleeding and should be given in high daily doses, such as progesterone 5 to 10 mg. or pranone 20 to 40 mg. for from three to ten days.

The inhibitive effect of progestin on uterine contractions has led to its employment for "after-pains," which may be controlled by as little as 1 mg. of progesterone. However, the ease with which this postpartum complication usually can be treated successfully with sedatives does not make the employment of an expensive endocrine preparation very attractive.

Progesterone has been given patients with primary dysmenorrhea because of its action on the myometrium and also on the basis of the unproved theory that this condition is due to a defective corpus luteum. The treatment is usually begun seven to ten days before the onset of the menses by giving 1 to 3 mg. of progesterone or 5 to 10 mg. of pranone every one or two days. Although immediate favorable results have been reported in a fair number of cases, permanent cures are found in far fewer instances.

Stanford Hospital (15).

HORMONES OF THE ANTERIOR LOBE OF THE PITUITARY BODY

A CLINICAL REVIEW

EDWARD H. RYNEARSON, M.D.

ROCHESTER, MINN.

The authors of other papers in this series have an advantage in that they are writing about hormones which in most instances have been isolated in a pure form, in some instances have been synthesized and in all instances have been given adequate clinical trial. The lactogenic hormone is the only one of the anterior pituitary hormones that has been obtained in crystalline form;[1] no hormone of the anterior lobe has been synthesized and few have had extensive clinical trial.

Certainly more than nine tenths of the articles written on the anterior lobe of the pituitary body pertain to fundamental studies of anatomy, histology, physiology, biochemistry and allied subjects. Two excellent sources of reference to this material are Van Dyke's[1a] work on "The Physiology and Pharmacology of the Pituitary Body" and the collection of articles published by the American Medical Association entitled "Glandular Physiology and Therapy."[2]

For several years the current literature has been summarized in reviews,[3] and the literature has again been searched for references to the clinical use of these hormones. Sevringhaus[4] and Aub and Karnofsky[5] have summarized the clinical aspects of this problem. I have had the opportunity to see a great many patients who have, or were supposed to have, disturbances of the anterior lobe of the pituitary body, many of whom were treated with anterior pituitary extracts which were made available by pharmaceutical firms. No reports of these experiences have been published.

There are several reasons why this whole subject of the anterior lobe of the pituitary body is very discouraging. First, that scientists working in different laboratories have had so few agreements. If one group of workers is sure there is a single growth hormone available in pure form, another group doubts that this is true and postulates that the growth effect results from a combination of other pituitary hormones. One laboratory finds four or five separate gonadotropic hormones; another laboratory finds only one. There are investigators who question whether these are really separate hormones and who suggest that a few "principles" may have varying effects on different end organs. The clinician is bewildered by these conflicting opinions, by the great difference in species response, by the confusing difference in types of units, and he is inclined to say "if, with thousands of animals and the opportunity of careful control, these scientists are so far from agreement, how can one be expected to evaluate clinical response in a few patients?"

Second, the clinician knows that all anterior pituitary hormones are proteins and he suspects that, in order to make the extracts sufficiently free of protein for human injection, most of the active principles have been removed. (Some very valuable hormones, such as insulin, however, are proteins and cannot be synthesized.) Certainly discriminating clinicians have been disappointed with the use of the extracts which were available. Assays of these extracts are not inclined to change this supicion.[6]

Referring again to the fundamental studies, the clinician asks "Just how many anterior pituitary hormones are there?" He will find no answer in the available literature, but he will find discussions of many "fractions" including thyrotropic, somatotropic (growth), mammatropic, lactogenic, pancreatropic, diabetogenic, adrenocorticotropic, gonadotropic, and those affecting the metabolism of carbohydrate, protein, fat and water. Space prevents a discussion of all these but a few will be described.

GROWTH HORMONE

No clinician doubts the important relationship of the anterior lobe of the pituitary body to growth. He has seen cases in which gigantism and acromegaly resulted from adenomas of the eosinophilic cells; he has seen

From the Division of Medicine, Mayo Clinic.

This paper, in a symposium on "The Practical Aspects of Endocrinology," is published under the auspices of the Section on Experimental Medicine and Therapeutics.

1. Since this paper was written Li and Evans have reported the isolation in pure form of pituitary growth hormone (Science **99:** 183-184 [March 3] 1944).

1a. Van Dyke, H. B.: The Physiology and Pharmacology of the Pituitary Body, Chicago, University of Chicago Press, 1936, vol. 1; 1939, vol. 2.

2. Glandular Physiology and Therapy: A Symposium Prepared Under the Auspices of the Council on Pharmacy and Chemistry of the American Medical Association, Chicago, American Medical Association Press, 1942.

3. Rynearson, E. H., and Hodgson, C. H.: Recent Advances in Our Knowledge of the Anterior Lobe of the Hypophysis, Arch. Int. Med. **62:** 160-176 (July) 1938. Rynearson, E. H., and Schweiger, L. R.: Review of Literature on the Pituitary Body (1938 and 1939), ibid. **66:** 226 (July) 1940. Rynearson, E. H., and Hildebrand, A. G.: Metabolism and Diabetes: Review of Certain Recent Contributions, ibid. **68:** 134-175 (July) 1941. Hildebrand, A. G., and Rynearson, E. H.: Diseases of Metabolism: Review of Certain Recent Contributions, ibid. **69:** 344-365 (Feb.) 1942; Review of the Literature on the Pituitary Gland (1940 and 1941), ibid. **71:** 262-296 (Feb.) 1943.

4. Sevringhaus, E. L.: Dysfunctions of the Anterior Lobe of the Pituitary and Their Treatment, J. A. M. A. **116:** 221-225 (Jan. 18) 1941.

5. Aub, J. C., and Karnofsky, D.: Medical Progress; Endocrinology: Treatment of Abnormalities of the Anterior Pituitary Gland, New England J. Med. **226:** 759-768 (May 7) 1942.

6. Evans, J. S.; Hines, L. R.; Varney, R., and Koch, F. C.: Comparative Assay of Gonadotropic Substances on Rats, Mice and Chicks, Endocrinology **26:** 1005-1011 (June) 1940. The Present Status of the Gonadotropic Hormone from the Serum of Pregnant Mares: Gonadogen (the Upjohn Company), Anteron (Schering Corporation) and Gonadin (Cutter Laboratories) Not Acceptable for N. N. R., report of the Council on Pharmacy and Chemistry, J. A. M. A. **115:** 1998-1999 (Dec. 7) 1940. Gustavson, R. G., and D'Amour, F. E.: The Assay of Gonadotropins and of Gonadal Hormones, ibid. **117:** 188-193 (July 19) 1941. The Present Status of Therapy with Chorionic Gonadotropin, report of the Council on Pharmacy and Chemistry, ibid. **114:** 487-489 (Feb. 10) 1940. D'Amour.[41] Chorionic Gonadotropin (Follutein).[23] Freed.[40]

instances of pituitary dwarfism; he may have seen instances of Simmonds' cachexia. He knows, however, that many glandular extracts contribute to growth, for he has seen a child with juvenile myxedema grow 6, 7 or more inches in a year as a result of administration of thyroid. He asks "Is there a single growth hormone?"

Evans, who has dedicated more than twenty years of study to this subject, has been convinced that the answer to this question is "Yes!" The clinician should read his evidence.[7] He also should read the articles by Riddle and his associates,[8] referred to by Evans, who answered this question "No." P. E. Smith[9] reviewed the evidence and agreed that "in mammals a specific principle is secreted by the hypophysis which is essential for general body growth."

Growth hormone has been available enough years to have had extensive clinical trial. Relatively few physicians have found their experience sufficiently encouraging to warrant publication. When asked why they haven't recorded their results, the usual answer is "I've never seen growth hormone help any one." It is a difficult matter to evaluate the published reports. First, the preparation itself may not always have been potent. Second, rarely has the growth hormone been used alone. Third, the selection of cases often has been poor. Fourth, standards for growth are not established. Heredity, diet, environment, rate of maturation, many hormones—all are involved in growth, and students of this problem are presenting valuable information.[10]

The literature contains many references to the clinical use of the growth hormone.[11] Some of these reports are not scientifically sound. The cases are poorly selected, the patients poorly controlled, the treatment is multiple (almost always including thyroid), yet the conclusion often is "A dramatic response followed the use of growth hormone."

The title of one paper (Jacobsen and Cramer[12]) is "Clinical Results of Anterior Pituitary Therapy in Children," yet in 9 of the 10 cases reported the children received both thyroid and anterior pituitary. Ruppersberg's[13] patient was treated with a low calory diet, oral administration of thyroxin and anterior pituitary and the hypodermic administration of growth extract.

Shelton[14] has probably had a longer and greater experience with the clinical use of the growth hormone than any other individual. His earlier papers were enthusiastic. In his latest paper[14] he reviewed the whole subject in detail and said:

> In spite of my early enthusiasm I have seen but one proven case of growth stimulation in a child by the use of such material [growth hormone]. This child had absolutely nothing but the anterior pituitary extract in large doses for several years. Every other patient I have seen recorded as treated successfully received thyroid and/or vitamins and minerals, hydrochloric acid or some other medicament which may have influenced growth concomitantly.

Growth has followed the use of hormones other than the growth fraction.[15]

THE THYROID STIMULATING HORMONE

The thyroid stimulating hormone is an accepted hormone which, when injected into certain test animals, can reproduce all the signs and symptoms of toxic diffuse goiter, including exophthalmos. Study of the thyroid gland of treated animals shows the typical hyperplastic changes seen in the thyroid gland removed from patients suffering from this disease. This constitutes a great advance in knowledge but has raised

7. Evans, H. M.: Growth Hormone of the Anterior Lobe of the Pituitary Gland, in Glandular Physiology and Therapy, pp. 19-31.

8. Bates, R. W.; Laanes, T., and Riddle, O., cited by Evans.[7]

9. Smith, P. E.: Relationship of Anterior Lobe of the Hypophysis to Other Endocrine Glands, in Glandular Physiology and Therapy, pp. 3-18.

10. Meredith, H. V.: Stature and Weight of Children of United States, with Reference to the Influence of Racial, Regional, Socio-economic and Secular Factors, Am. J. Dis. Child. **62:** 909-932 (Nov.) 1941. Lloyd-Jones, O.: California Tall Children, ibid. **60:** 11-21 (July) 1940. Greulich, W. W.; Day, J. G.; Lachman, S. E.; Wolfe, J. B., and Shuttleworth, F. K.: A Handbook of Methods for the Study of Adolescent Children, Monographs of the Society for Research in Child Development, Washington, D. C., Society for Research in Child Development, National Research Council, 1938, vol. 3, number 2, serial number 15. Jung, F. T.: The Physiological Changes Incident to Puberty, Illinois M. J. **80:** 477-484 (Dec.) 1941. Nathanson, I. T.; Towne, L. E., and Aub, J. C.: Normal Excretion of Sex Hormones in Childhood, Endocrinology **28:** 851-865 (June) 1941. Greene, J. A., and Johnston, G. W.: Metabolic Changes by Extracts of Anterior Hypophysis in Primary-Pituitary and Nonpituitary Dwarfs, J. Clin. Endocrinol. **1:** 327-330 (April) 1941. Lee, M. O., and Schaffer, N. K.: Anterior Pituitary Growth Hormone and the Composition of Growth, J. Nutrition **7:** 337-363 (March) 1934. Long, C. N. H.: Pituitary Hormones Influencing Growth in Higher Animals, in Cold Spring Harbor Symposia on Quantitative Biology, Cold Spring Harbor, L. I., New York, Biological Laboratory, 1942, vol. 10, pp. 91-103. Johnston, J. A., and Maroney, J. W.: Observations on Nitrogen and Calcium Balances as Affected by Growth and Gonadotropic Hormones Administered for Short Periods to Growing Children, Endocrinology **25:** 199-210 (Aug.) 1939. Bayer, L. M., and Gray, H.: Pituitary Dwarfs: Their Growth and Treatment; Observations on 12 Cases for Periods of One to Eight Years, California & West. Med. **47:** 228-232 (Oct.) 1937. Watson, E. H., and Moehlig, R. C.: Suggestions for Conducting Growth Studies, Endocrinology **27:** 411-424 (Sept.) 1940. Webster, B.: Modifiability of Growth by Administration of Endocrine Substances, J. Pediat. **14:** 684-690 (May) 1939.

11. Greene, J. A.; January, L. E., and Swanson, L. W.: Use of Anterior Pituitary Extracts in Uncontrolled Diabetes Mellitus with Growth and Sexual Retardation, J. Clin. Endocrinol. **1:** 538-540 (June) 1941. Looney, J. M.: The Treatment of Pituitary Dwarfism with Growth Hormone, Endocrinology **26:** 163-166 (Jan.) 1940. Schaefer, R. L.: Endocrine Dwarfism, ibid. **20:** 64-71 (Jan.) 1936. Schaefer, R. L., and Strickroot, F. L.: Endocrine Dwarfism, ibid. **26:** 599-604 (April) 1940. Shechter, F. R.; Steinberg, A.; Pastor, N.; Segal, H. I., and Colton, N. H.: Dwarfism: Diagnostic Criteria and Endocrine Therapy, Growth **6:** 419-449 (Dec.) 1942. Werner, A. A.; Lewald, J.; Johns, G. A., and Kelling, D.: Growth in Children with Mongolism: A Four Year Study of Eight Patients, Am. J. Dis. Child. **57:** 554-563 (March) 1939. Buchanan, J. A., and Ballweg, H. A.: A Case of Pituitary Dwarfism Treated with Antuitrin-G, Endocrinology **24:** 565-571 (April) 1939. Molitch, M., and Poliakoff, S.: Clinical Results of Anterior Pituitary Therapy in Children, ibid. **22:** 422-428 (April) 1938. Taylor, N. M.: Pituitary Dwarfism: Treatment with

(Footnote 11 continued in next column)

Growth Hormone, ibid. **22:** 707-715 (June) 1938. Rudolf, G. de M.: The Treatment of a Cretin with Anterior Pituitary Extract, ibid. **23:** 364-366 (Sept.) 1938. Baird, K. A.: A Case of Arrested Growth Apparently Stimulated by Use of "Antuitrin Growth," Canad. M. A. J. **37:** 380-381 (Oct.) 1937. Shelton, E. K.; Cavanaugh, L. A., and Evans, H. M.: Hypophysial Infantilism: Treatment with Anterior Hypophysial Extract; Preliminary Study, Am. J. Dis. Child. **47:** 719-736, (April) 1934. Shelton, E. K.: Pituitary Growth Factor: Some Clinical Considerations, California & West. Med. **45:** 20-25 (July) 1936. Shelton, E. K.; Cavanaugh, L. A., and Evans, H. M.: Hypophysial Infantilism: Treatment with an Anterior Hypophysial Extract; Final Report, Am. J. Dis. Child. **52:** 100-113 (July) 1936. Turner, H. H.: Anterior Pituitary Dwarfism: Further Report of Cases Treated with the Growth Hormone, South. M. J. **28:** 309-316 (April) 1935. Dorff, G. B.: A Case of Pituitary Infantilism Treated with Commercial Anterior Pituitary Preparations, Endocrinology **19:** 209-212 (March-April) 1935. Engelbach, W.: The Growth Hormone: Report of a Case of Juvenile Hypopituitarism Treated with Evans' Growth Hormone, ibid. **16:** 1-19 (Jan.-Feb.) 1932. Engelbach, W.; Schaefer, R. L., and Brosius, W. L.: Endocrine Growth Deficiencies: Diagnosis and Treatment, ibid. **17:** 250-262 (May-June) 1933. Engelbach, W., and Schaefer, R. L.: Endocrine Dwarfism, ibid. **18:** 387-392 (May-June) 1934; Endocrine Dwarfism, J. A. M. A. **103:** 464-468 (Aug. 18) 1934. Goldberg, M. M.: Treatment of Pituitary Infantilism with Antuitrin: Report of Case, Endocrinology **18:** 233-234 (March-April) 1934. Hurxthal, L. M.: Treatment of Gigantism: Observations on Pituitary Giant for Six Years, J. Clin. Endocrinol. **3:** 12-19 (Jan.) 1943. Shelton.[14]

12. Jacobsen, W. A., and Cramer, A. J.: Clinical Results of Anterior Pituitary Therapy in Children, J. A. M. A. **109:** 101-108 (July 10) 1937.

13. Ruppersberg, A.: Treatment of Juvenile Adiposogenital Dystrophy with Anterior Pituitary Growth Complex, Ohio State M. J. **36:** 149-150 (Feb.) 1940.

14. Shelton, E. K.: Clinical Aspects of Dwarfing, Endocrinology **30:** 1000-1014 (June) 1942.

15. Severinghaus, A. E.: The Relation of Gonadotropic and Thyrotropic Hormones to Development, in Cold Spring Harbor Symposia on Quantitative Biology, 1942, vol. 10, pp. 104-110. Dorff, G. B.: Chorionic Gonadotropic Effects on Height and Osseous Development in Sexually Underdeveloped Young Boys, Endocrinology **27:** 403-410 (Sept.) 1940; Rapid Growth in Height Produced by Chorionic Gonadotropin in a Dwarfed Infantile Identical Twin, J. Clin. Endocrinol. **1:** 940-944 (Dec.) 1941. Wilkins, L.; Fleischmann, W., and Howard, J. E.: Creatinuria Induced by Methyl Testosterone in the Treatment of Dwarfed Boys and Girls, Bull. Johns Hopkins Hosp. **69:** 493-503 (Dec.) 1941.

more questions than it has settled. The many articles dealing with the fundamental aspects of this hormone are to be found in Van Dyke's books and Collip's summary. Collip [16] discussed the relation of the thyrotropic hormone to other hypophysial principles, the mechanism of its action, methods for its assay, the thyrotropic content of the blood and urine in various diseases, the preparation of the active extracts and the effect of iodine on the action of this hormone. These headings are listed because they indicate the detailed study which this hormone has received.

It has not had an extensive clinical trial. Wilkins and Fleischmann [17] have studied it intensively. Thompson and his associates [18] have had the greatest experience with its use, as they have injected it in 145 cases. Since the hormone requires a functioning end organ it is not surprising that it raised the basal metabolic rate in only 1 of 16 cases of myxedema. In patients with a low basal metabolic rate without myxedema, striking effects were sometimes observed; not infrequently the rate was raised to thyrotoxic levels:

> In 18 patients with rates varying from —29 per cent to +8 per cent [that is, subnormal to normal] the basal metabolism was raised to levels varying from +15 to +47 per cent, in association with the development of many of the signs and symptoms of thyrotoxicosis except exophthalmos. These symptoms usually began to disappear immediately following omission of treatment or disappeared gradually if treatment was continued. The nervous manifestations of the syndrome simulated closely those seen in toxic goiter and included nervousness, tremor, crying spells, insomnia and inability to lie or sit still. So far as we could tell, the clinical state was similar to that seen in most cases of toxic goiter. Of considerable interest was the development of cardiac decompensation and auricular fibrillation in 1 patient in whom the rate was raised from —2 to +47 per cent. Both disappeared after the administration of the extract was omitted. Cardiac decompensation also developed in a patient with toxic goiter when the rate was raised from +48 to +74 per cent.

The ideal test subject for the use of the thyrotropic hormone should be a patient suffering from "pituitary myxedema." Lerman and Stebbins [19] reported its unsuccessful use in such a patient.

THE GONADOTROPIC HORMONE OR HORMONES

As previously mentioned there is no general agreement as to the number of pituitary hormones which affect the male and female gonads. Gonadotropins are of three types: (1) those obtained from the anterior lobe of the pituitary body, (2) those extracted from pregnancy urine (chorionic) and (3) those extracted from the serum of pregnant mares (equine). The last two are probably products of the chorioplacental tissues and can best be described as "pituitary-like." Theoretically the gonadotropin of choice should be that obtained from the pituitary body itself. Hamblen [20] said "There are no extracts of the anterior pituitary which are sufficiently free of toxic or reaction-producing materials for satisfactory clinical use and which combine potency and practicability for prolonged therapy." Few published reports record experience with true pituitary gonadotropins.[21] Many articles deal with the use of chorionic and equine gonadotropins.[22] The chorionic type has had years of clinical application, and early reports were enthusiastic. Later reports recorded general disappointment in the treatment of ovarian and testicular failure, and this substance did not receive a favorable report from the Council on Pharmacy and Chemistry.[23] It has been used successfully in certain cases of undescended testes.[24] The highly potent equine gonadotropin (Cole and Hart [25]) revived hope that this might be the answer to the physician's demand. What physicians want is some product which is capable of stimulating the nonfunctioning ovary or testis without unpleasant or dangerous side-effects. Davis and Koff [26] made the startling announcement that they actually had produced ovulation in a human being. Many subsequent reports have appeared,[27] and

16. Collip, J. B.: Corticotropic (Adrenotropic), Thyrotropic and Parathyrotropic Factors, in Glandular Physiology and Therapy, pp. 33-50.

17. Wilkins, L., and Fleischmann, W.: Hyperthyroidism in Childhood: IV. The Creatine and Cholesterol Response to Thyrotropic Hormone, J. Clin. Endocrinol. **1:** 98-108 (Feb.) 1941.

18. Thompson, W. O.; Taylor, S. G.; Thompson, P. K.; Nadler, S. B., and Dickie, L. F. N.: The Calorigenic Action of Extracts of the Anterior Lobe of the Pituitary in Man, Endocrinology **20:** 55-63 (Jan.) 1936. Thompson, W. O.; Thompson, P. K.; Taylor, S. G., and Dickie, L. F. N.: The Influence of the Pituitary in Thyroid Disease, West. J. Surg. **47:** 4-9 (Jan.) 1939. Thompson, W. O.; Thompson, P. K., and Taylor, S. G.: Further Observations on the Thyrotropic Activity of the Anterior Pituitary, ibid. **48:** 633-635 (Oct.) 1940.

19. Lerman, J., and Stebbins, H. D.: Pituitary Type of Myxedema: Further Observations, J. A. M. A. **119:** 391-395 (May 30) 1942.

20. Hamblen, E. C.: Endocrine Therapy in Gynecology and Obstetrics, Am. J. Obst. & Gynec. **45:** 147-160 (Jan.) 1943.

21. Campbell, R. E., and Sevringhaus, E. L.: Pituitary Gonadotropic Extracts for Treatment of Amenorrhea, Menorrhagia and Sterility, Am. J. Obst. & Gynec. **37:** 913-928 (June) 1939.

22. Davis, M. E., and Hellbaum, A. A.: Present Status of Gonadotropic Therapy to Gynecologic Practice, J. Clin. Endocrinol. **3:** 517-525 (Sept.) 1943. Shorr, E., and Papanicolaou, G. N.: Action of Gonadotropic Hormones in Amenorrhea as Evaluated by Vaginal Smears, Proc. Soc. Exper. Biol. & Med. **41:** 629-636 (June) 1939. Bowes, K.: Treatment of Menstrual Irregularities by a New Sex Hormone Preparation: Preliminary Note, Brit. M. J. **2:** 904-905 (Nov. 6) 1937. Burch, J. C.: Endocrine Therapy in Obstetrics and Gynecology, Surg., Gynec. & Obst. **70:** 503-508 (Feb. 15) 1940. Sevringhaus, E. L.: The Choice of Ovarian or Pituitary Therapy for Menstrual Disturbances, Ann. Int. Med. **13:** 629-635 (Oct.) 1939. Sevringhaus, E. L.: Treatment of Gonadal Hypofunction, Bull. New York Acad. Med. **16:** 53-82 (Feb.) 1940. Sevringhaus, E. L., and Campbell, R. E.: Endocrinopathic Amenorrhea: Causes and Treatment, Am. J. Surg. **48:** 197-204 (April) 1940. Novak, E.: A Brief Epitome of Gynecologic Endocrinology and Organotherapy, Am. J. Obst. & Gynec. **32:** 887-895 (Nov.) 1936; Clinical Syndromes Referable to Failure of Ovulation, with Special Reference to Certain Cases of Sterility, and Functional Bleeding, ibid. **37:** 605-616 (April) 1939. Samuels, L. T.; Winther, N., and Yolton, N.: Hormone Therapy and Sex Hormone Excretion, J. Clin. Endocrinol. **1:** 485-493 (June) 1941. Ross, R. A.: Sex Endocrinology and Pelvic Surgery, South. Surgeon **9:** 387-402 (June) 1940; The Correlation of Sex Endocrines and Pelvic Surgery in Gynecologic Therapy, South. Med. & Surg. **102:** 545-549 (Oct.) 1940. Livingston, S. H.; Birnberg, C. H., and Kurzrok, L.: The Treatment of Amenorrhea of Endocrine Origin, Am. J. Surg. **44:** 409-415 (May) 1939. Kennedy, R. B., and Shelton, C. F.: The Mare Serum Hormone in the Treatment of Certain Endocrine Dysfunctions in Women: A Clinical Study, J. Michigan M. Soc. **38:** 209-212 (March) 1939. Greenhill, J. P., and Freed, S. C.: Gynecologic and Obstetric Endocrinology, West. J. Surg. **49:** 318-330 (June) 1941.

23. Chorionic Gonadotropin (Follutein), report of the Council on Pharmacy and Chemistry, J. A. M. A. **114:** 2306-2307 (June 8) 1940.

24. Rea, C. E.: Further Report on the Treatment of the Undescended Testes by Hormonal Therapy at the University of Minnesota Hospitals: Discussion of Spontaneous Descent of Testis and Evaluation of Endocrine Therapy in Cryptorchidism, Surgery **7:** 828-835 (June) 1940. Thompson, W. O., and Heckel, N. J.: Endocrine Treatment of Cryptorchism, J. A. M. A. **117:** 1953-1956 (Dec. 6) 1941.

25. Cole, H. H., and Hart, G. H.: The Potency of Blood Serum of Mares in Progressive Stages of Pregnancy in Effecting the Sexual Maturity of the Immature Rat, Am. J. Physiol. **93:** 57-68 (May) 1930.

26. Davis, M. E., and Koff, A. K.: The Experimental Production of Ovulation in the Human Subject, Am. J. Obst. & Gynec. **36:** 183-199 (Aug.) 1938.

27. Hamblen, E. C.: The Clinical Evaluation of Ovarian Responses to Gonadotropic Therapy, Endocrinology **24:** 848-866 (June) 1939; The Endocrine Therapy of Functional Ovarian Failure, Am. J. Obst. & Gynec. **40:** 615-620 (Oct.) 1940. Hamblen, E. C., and Pullen, R. L.: The Endocrine Therapy of Ovarian Failure, Virginia M. Monthly **68:** 375-381 (July) 1941. Buxton, C. L.: The Effects of Certain Gonadotropic Extracts on Anovulatory Cycles and Amenorrhea, Am. J. Obst. & Gynec. **42:** 236-241 (Aug.) 1941. Mazer, C., and Ravetz, E.: Effect of Combined Administration of Chorionic Gonadotropin and Pituitary Synergist on Human Ovary: Preliminary Report, ibid. **41:** 474-484 (March) 1941. Frank, R. T.; Goldberger, M. A., and Felshin, G.: Clinical and Laboratory Investigations of Some of the Newer Sex Hormone Preparations, Endocrinology **27:** 381-384 (Sept.) 1940. Fluhmann, C. F.: The Biologic Characteristics of Equine Gonadotropic Hormone, West. J. Surg. **48:** 63-74 (Feb.) 1940. Bonime, R. G.: The Effect of Pregnant Mare Serum Hormone on a Case of Primary Hypo-Ovarianism, J. Clin. Endocrinol. **2:** 254-256 (April) 1942. Gray, L. A.: Effect of Pregnant Mare's Serum Hormone on the Abnormal Ovary, South. M. J. **33:** 160-170 (Feb.) 1940. Siegler, S. L., and Fein, M. J.: Studies in Artificial Ovulation with the Hormone of Pregnant Mare's Serum, Am. J. Obst. & Gynec. **38:** 1021-1036 (Dec.) 1939. Greenblatt, R. B., and Krafka, J., Jr.: Ruptured Human Follicle with Ovum in Situ, Arch. Path. **31:** 634-639

(Footnote 27 continued on next page)

in general the evidence does not support the original claim. Studies on female monkeys by Hartman [28] and on male monkeys by Smith [29] did not produce satisfactory results; deleterious effects were observed.

Equine gonadotropin (not always alone) has been used in the treatment of sterility of men and women.[30] There is little evidence to suggest that there is any effect on spermatogenesis or that, when it is used alone, it will affect sterility of women. The difficulties in establishing criteria for the determinations of effectiveness is stressed in several of these articles.[31]

Gusman and Goldzieher [32] discussed the synergism between pituitary extracts and chorionic gonadotropins. Hamblen [33] has advocated what he termed the "1-2 treatment." He summarized this program as follows:

> The cyclic 1-2 gonadotropic schedule attempts to duplicate the hormonology of the menstrual cycle and takes into account a likely synergism of the follicle-stimulating and luteinizing gonadotropin fractions. It embraces the sequential and cyclic use of equine gonadotropin for its follicle-stimulating properties (follicle-stimulating hormone) and chorionic gonadotropin for its luteinizing ability (luteinizing hormone). The therapeutic schedule is as follows: Beginning on the fifth day of the cycle equine gonadotropin is given intramuscularly in daily doses of 400 I. U. for ten days; beginning on the sixteenth day of the cycle, chorionic gonadotropin is given intramuscularly in daily doses of 500 I. U. for ten days. We and others have found this form of therapy to be effective in inducing ovulation in some patients with anovulatory ovarian failure.

LACTOGENIC HORMONE

In order that breast tissue may produce milk, it must have developed and grown normally, must have been influenced by other hormones (particularly estrogens) and must have received the stimulus from an anterior pituitary lactogenic hormone. Riddle [34] has reviewed the large amount of study given this role of the pituitary body and has discussed the possibility that there may be at least two pituitary hormones: mammogenic, which affects the growth and development of the breast, and lactogenic, which initiates lactation. The lactogenic hormone (prolactin) is the only one of the pituitary hormones which is available in crystalline form; [1] therefore, it might be expected to produce less controversial results than other pituitary fractions, but such is not the case. Few reports of its clinical use have been published since Riddle's review appeared.[35]

In summary, these articles reveal first the great complexity of the process of lactation and the number of hormones which by their absence or excess may interfere with the normal production of milk. Riddle said:

> Since it is thus obvious that so much of the organism—assimilative, endocrine and neural—becomes involved in the initiation, augmentation and maintenance of lactation, the term "lactogenic hormone" is equivocal and its use often a serious error; others (not ourselves) have rather generally ventured to employ this term as an alternative designation for that hormone which was found to initiate milk secretion in prepared mammary tissue and which after its isolation and establishment as an entity was called prolactin. Lactogenesis involves several hormones and many other factors; prolactin is a specific substance. Only full recognition of this distinction, along with awareness of other actions of prolactin, is likely to lead to satisfactory clinical use of this substance.

Second, when the hormone is given in doses of from 100 to 400 units per day to postpartum women with deficient lactation the results are very variable. Some reports are very encouraging; on the other hand, Werner [36] stated that "the present preparations of lactogenic hormones are impure and unsafe for human use." Kenny and King [37] studied 86 women, 43 of whom were treated with the usual methods (breast pump and "galactogogues") and 43 of whom were treated with prolactin. Seventy-four per cent of the treated patients and only 21 per cent of the control

(May) 1941. Greenblatt, R. B., and Pund, E. R.: The Gonadotropins: A Clinical and Experimental Study, with Observations on Use of New Gonadotropic Mixture and on Combined Equine and Chorionic Gonadotropin Administration, South. M. J. **34:** 730-742 (July) 1941. Greenblatt, R. B.: Histologic Changes in the Ovary Following Gonadotropin Administration, Am. J. Obst. & Gynec. **42:** 983-996, (Dec.) 1941. Erving, H. W.; Sears, C., and Rock, J.: Clinical Experiences with Equine Gonadotropic Hormone, ibid. **40:** 695-713 (Oct.) 1940. Siegler, S. L.: Further Experiences with the Hormone of Pregnant Mare Serum, Endocrinology **27:** 387-391 (Sept.) 1940. Brewer, J. I.; Jones, H. O., and Skiles, J. H., Jr.: Effect of Gonadotropic Substance on Ovulation: Results of Intramuscular Use of Preparation of High Potency from Pregnant Mare Serum, J. A. M. A. **118:** 278-283 (Jan. 24) 1942. Rydberg, E., and Pedersen-Bjergaard, K.: Effect of Serum Gonadotropin and Chorionic Gonadotropin on the Human Ovary, J. A. M. A. **121:** 1117-1122 (April 3) 1943.

28. Hartman, C. G.: The Use of Gonadotropic Hormones in the Adult Rhesus Monkey, Bull. Johns Hopkins Hosp. **63:** 351-371 (Dec.) 1938.

29. Smith, P. E.: Effect of Equine Gonadotropin on Testes of Hypophysectomized Monkeys, Endocrinology **31:** 1-12 (July) 1942.

30. Hamilton, J. B.: Therapeutics of Testicular Dysfunction, J. A. M. A. **116:** 1903-1908 (April 26) 1941. McCullagh, E. P., and Ryan, E. J.: Effect of Various Gonadotropins on Spermatogenesis and Urinary Androgens in the Human, J. Clin. Endocrinol. **1:** 728-741 (Sept.) 1941. Kunstadter, R. H.: The Treatment of Hypogenitalism in the Male with the Gonadotropic Principle of Pregnant Mare's Serum, Endocrinology **25:** 661-669 (Nov.) 1939. Gordon, M. B., and Fields, E. W.: Observations on the Effect of Chorionic Gonadotropic Hormone and Male Sex Hormone on Eunuchoidism, J. Clin. Endocrinol. **3:** 589-595 (Nov.) 1943. Davis, C. D.; Madden, J. H. M., and Hamblen, E. C.: Therapy of Seminal Inadequacy: Use of an Extract of Chorionic Gonadotropin and "Pituitary Synergist," ibid. **3:** 357-363 (June) 1943. Griffith, L. S., and McBride, W. P. L.: The Anovulatory Factor in Sterility, Am. J. Obst. & Gynec. **43:** 1012-1016 (June) 1942. Gutman, J., and Siegler, S. L.: The Endocrines in Sterility, M. Rec. **151:** 86-89 (Feb. 7) 1940. Hall, G. J.: Gonadotropic Hormone of Pregnant Mare's Serum: Its Clinical Use in Gynecology, California & West. Med. **51:** 159-163 (Sept.) 1939. Huber, C. P., and Davis, M. E.: The Clinical Use of Gonadotropic Hormone from Pregnant Mare Serum, Surg., Gynec. & Obst. **70:** 996-1005 (June) 1940. Rubenstein, B. B.: Functional Sterility in Women, Ohio State M. J. **35:** 1066-1068 (Oct.) 1939. Stein, I. F.: Further Studies in Infertility and Sterility: An Analysis of Two Hundred Couples, Surg., Gynec. & Obst. **67:** 731-739 (Dec.) 1938. Campbell, A. D.: Certain Aspects of So-Called Sterility in the Female, ibid. **68:** 489-494 (Feb. 15) 1939. Hamblen, E. C.; Cuyler, W. K.; Wilson, J. A., and Pullen, R. L.: Endocrine Therapy of Functional Menometrorrhagia and Ovarian Sterility: Cyclic Administration of Equine Gonadotropin, J. Clin. Endocrinol. **1:** 742-748 (Sept.) 1941.

31. Hamblen, E. C.: Some Endocrine Factors Responsible for Sterility in Women, West. J. Surg. **48:** 300-303 (May) 1940. Kotz, J., and Parker, E.: Etiologic Factors in Sterility: Report of Study of One Hundred and Fifty Cases, Am. J. Obst. & Gynec. **37:** 233-241 (Feb.) 1939.

32. Gusman, H., and Goldzieher, M. A.: Synergism Between Pituitary Extracts and Chorionic Gonadotropins, Endocrinology **29:** 931-933 (Dec.) 1941.

33. Hamblen, E. C.: Some Observations on the Gynecic Employment of Equine Gonadotropins. Am. J. Obst. & Gynec. **41:** 495-513 (March) 1941. Hamblen, E. C.; Cuyler, W. K.; Wilson, J. A., and Pullen, R. L.: Endocrine Therapy of Functional Menometrorrhagia and Ovarian Sterility: IV. One-Two Cyclic Therapy with Equine and Chorionic Gonadotropins, J. Clin. Endocrinol. **1:** 749-753 (Sept.) 1941.

34. Riddle, O.: Lactogenic and Mammogenic Hormones, in Glandular Physiology and Therapy, pp. 67-82.

35. Asdell, S. A.; Brooks, H. J.; Salisbury, G. W., and Seidenstein, H. R.: Experiments in the Physiology of Mammary Development and Lactation, Memoir 198, Cornell Agricultural Experiment Station 1936. Folley, S. J., and Young F. G.: The Effect of Anterior Pituitary Extracts on Established Lactation in the Cow, Proc. Roy. Soc. London, s. B **126:** 45-76 (Sept. 23) 1938. Asimow, G. I.: Problème der Laktationsphysiologie, in Proceedings of the Fifteenth International Physiological Congress, Leningrad-Moscow, Aug. 9 to 16, 1935, Moscow, State Biol. & Med. Press, 1938, pp. 132-133. Graham, W. R., Jr.: Action of Thyroxine on Milk and Milk-Fat Production of Cows, Biochem. J. **28:** 1368-1371, 1934. Brownell, K. A.; Lockwood, J. E., and Hartman, F. A.: Lactation Hormone of Adrenal Cortex, Proc. Soc. Exper. Biol. & Med. **30:** 783-784 (March) 1933. Kendall, E. C.; Mason, H. L.; Myers, C. S., and Allers, W. D.: Physiological and Chemical Investigation of the Suprarenal Cortex, J. Biol. Chem. **114:** lvii (May) 1936. Parkes, A. S., and Bellerby, C. W.: Studies on Internal Secretions of Ovary: Effects of Injection of Estrin During Lactation, J. Physiol. **62:** 301-314 (Jan.) 1927. Kurzrok, R.; Bates, R. W.; Riddle, O., and Miller, E. G., Jr.: The Clinical Use of Prolactin, Endocrinology **18:** 18-19 (Jan.-Feb.) 1934. Werner, A. A.: Experiment to Produce Lactation in Castrate Women, ibid. **19:** 144-150 (March-April) 1935. Evans, E. I.: The Lactogenic Hormone of the Anterior Pituitary, Proc. Inst. Med. Chicago **11:** 282-283 (April 15) 1937. Hoffmann, F.: Ueber die Entstehung der Laktation, Zentralbl. f. Gynäk. **60:** 2882-2886 (Dec. 5) 1936. Ross, J. R.: Prolactin: Its Effect on the Secretion of Woman's Milk, Endocrinology **22:** 429-434 (April) 1938. Stewart, H. L., Jr., and Pratt, J. P.: Effect of Prolactin on Mammary Gland Secretion, ibid: **25:** 347-353 (Sept.) 1939.

36. Werner, A. A.: Lactogenic Hormone: Severe Reactions from Its Use, Endocrinology **24:** 119-121 (Jan.) 1939.

37. Kenny, M.; King, E.; Evers, N., and Hurran, W. J.: Effect of Prolactin in Nursing Women, with Notes on Preparation of Prolactin, Lancet **2:** 828-831 (Oct. 14) 1939.

patients received completely satisfactory results. Complete failures occurred in 19 per cent of the treated women and in 63 per cent of the controls.

THE ANTIHORMONES

Two thorough reviews of the antihormones have appeared.[38] Thompson, Collip and Selye introduced their summary of this subject as follows:

> At the present time the term "antihormones" is most commonly applied to certain substances of unknown origin which appear in the serum of animals treated for long periods with certain anterior pituitary extracts, which apparently explain the observed gradual loss of responsiveness to such extracts and which are capable of making other animals, previously untreated, refractory to treatment with similar extracts. The demonstration of an antihormone of this type thus involves at least three groups of animals: first, those from which the original anterior pituitary extract is prepared; second, those to which this extract is administered until they become refractory to it and the antihormone is present in their serum; third, those to which the serum is administered and which then show partial or complete inhibition of their usual response to an anterior pituitary extract identical with or similar to that used in the first place. Extracts from endocrine organs other than the anterior lobe of the pituitary may also be found to decrease in efficacy when administered over long periods, and in one or two instances the serum of the treated animals may acquire inhibitory properties and be said to contain an antihormone. Various modifications of this term have been used in other senses as well.

They then reviewed the literature to date. Since then several additional articles have appeared.[39]

A review of this literature permits of two generalizations. First, that there are practically no instances of the development of antihormones following the administration of any hormones except those of the anterior lobe of the pituitary body. Antihormones do not follow the use of posterior pituitary extracts, thyroid extract or thyroxin, ovarian hormones, insulin and other similar preparations. Second, the development of antihormones further complicates the use of anterior pituitary extracts and seriously interferes with the effective use of such extracts. It is true that there is less antihormone effect with the more purified extracts, but there is always some. The development of antihormones constitutes the explanation for the failure of the hormones to be effective over a long period of time and explains the advice to give the extracts intermittently with a rest period between doses.

CONCLUSION

At the present time, disregarding "pituitary-like" preparations, it can be stated that there is little evidence that any extracts of the anterior lobe of the pituitary body are suitable for the routine treatment of patients. The Council on Pharmacy and Chemistry has accepted no such preparation.[40] Detailed studies of the results of the clinical use of certain preparations of the anterior pituitary body should be continued by competent observers. The D'Amours[41] have demonstrated that preparations of the anterior lobe purchased in drugstores have little demonstrable activity. It should be unnecessary to add that none of the preparations that are advertised for oral administration have proved effective.

In preparing this summary an effort has been made to review articles in which the author has attempted to be critical of his results. There are too many articles in which pituitary preparations of unknown character have been administered to patients with undiagnosed conditions. It is interesting that I found no report of a case of postoperative pituitary insufficiency (the ideal test) in which benefit was obtained by treatment with anterior pituitary extract alone. Attempts to treat pituitary cachexia[42] have not been very encouraging. It is difficult to know the number of cases of so-called pituitary cachexia in which the condition was not really anorexia nervosa. Patients suffering from pituitary insufficiency may respond to treatment with nonpituitary ("end organ") hormones, such as testosterone propionate and desoxycorticosterone acetate. Improvement has been reported following the use of chorionic hormone.[43] The relationship of anterior pituitary preparations to the development of tumors is being studied.[44]

The future may hold great promise, but even this is questionable. The anterior lobe of the pituitary body of a huge bull is still a small amount of tissue. Laboratories engaged in research often have difficulty obtaining enough glands for their experimental study. Even if active preparations could be prepared, free from antihormone effect, there still is doubt if enough could be furnished for extensive clinical use. There is the possibility that a very small amount of a purified hormone of the anterior lobe of the pituitary body might be more effective than larger amounts of the present unpurified extracts. No chemist has yet succeeded in synthesizing a protein substance. It should be remarked that this, in itself, is not a fundamental objection since insulin, a protein, is a very satisfactory hormone. Nothing is impossible, but the picture in 1944 is not very encouraging. It is to be hoped that a review in 1954 may present a different picture.

38. Thompson, K. W.: Antihormones, Physiol. Rev. **21**: 588-631 (Oct.) 1941. Thomson, D. L.; Collip, J. B., and Selye, H.: The Antihormones, in Glandular Physiology and Therapy, pp. 101-114.

39. Rowlands, I. W., and Spence, A. W.: Production of Antigonadotropic Activity in Man by Injection of Extract of Pregnant Mare's Serum, Brit. M. J. **2**: 947-950 (Nov. 11) 1939. Zondek, B., and Sulman, F.: The Antigonadotropic Factor with Consideration of the Antihormone Problem, Baltimore, Williams & Wilkins Company, 1942. Jailer, J. W., and Leathem, J. H.: Anti-Gonadotropic Substances in Man Following Treatment with Pregnant Mare Serum, Proc. Soc. Exper. Biol. & Med. **45**: 506-508 (Oct.) 1940. Gordon, A. S.; Kleinberg, W., and Charipper, H. A.: The Reticulo-Endothelial System and Hormone Refractoriness, J. Exper. Med. **70**: 333-346 (Oct.) 1939. Gordon, A. S.; Levenstein, I., and Charipper, H. A.: Influence of Age of Animal and Nature of Injected Hormone Preparation on Antihormone Production, Proc. Soc. Exper. Biol. & Med. **42**: 121-126 (Oct.) 1939. Gordon, A. S.: Antihormone Production to Crude and Purified Pregnant Mare Serum Preparations, Endocrinology **29**: 35-40 (July) 1941. Bischoff, F., and Clarke, G. J.: Gonadotropic Antagonism in Mature Rats, ibid. **29**: 163 (July) 1941. Bischoff, F., and Ingraham, L. P.: Influence of Antagonism Phenomenon on Mammary Gland Development, ibid. **31**: 326-328 (Sept.) 1942. Leathem, J. H., and Abarbanel, A. R.: Purification of Equine Gonadotropin and Its Effect on the Appearance of Antigonadotropic Substances in Human Sera, J. Clin. Endocrinol. **3**: 206-211 (April) 1943.

40. Freed, S. C.: Present Status of Commercial Endocrine Preparations, in Glandular Physiology and Therapy: A Symposium Prepared Under the Auspices of the Council on Pharmacy and Chemistry of the American Medical Association, Chicago, American Medical Association Press, 1942, pp. 537-558.

41. D'Amour, F. E., and D'Amour, M. C.: Comparison of International Gonadotropin Standards, Endocrinology **27**: 68-70 (July) 1940.

42. Calder, R. M.: Anterior Pituitary Insufficiency (Simmonds' Disease), Bull. Johns Hopkins Hosp. **50**: 87-114 (Feb.) 1932. Brougher, J. C.: Pituitary Cachexia: Report of a Patient Treated with Anterior Pituitary Extract, Endocrinology **17**: 128-132 (March-April) 1933. Berman, L.: The Treatment of a Type of Malnutrition (Simmonds' Disease-like) with Prepituitary Growth Hormone, New York State J. Med. **35**: 916-918 (Sept. 15) 1935. Escamilla, R. F., and Lisser, H: Simmonds' Disease: A Clinical Study with a Review of the Literature; Differentiation from Anorexia Nervosa by Statistical Analysis of 595 Cases, 101 of Which Were Proved Pathologically, J. Clin. Endocrinol. **2**: 65-96 (Feb.) 1942. Sheehan, H. L.: Simmonds' Disease Due to Postpartum Necrosis of the Anterior Pituitary, Quart. J. Med. **8**: 277-309 (Oct.) 1939.

43. Mogensen, E.: Three Cases of Simmonds' Syndrome, with Special Reference to Clinical Diagnosis and Hormone Treatment, Acta med. Scandinav. **105**: 378-394, 1940.

44. Bischoff, F.; Long, M. L.; Rupp, J. J., and Clarke, G. J.: Endocrine Factors Influencing Tumor Development, Endocrinology **28**: 769-779 (May) 1941. Bischoff, F.; Rupp, J. J., and Clarke, G. J.: Endocrine Factors Influencing Tumor Development, ibid. **31**: 329-333 (Sept.) 1942.

CLINICAL USE OF EXTRACTS FROM ADRENAL CORTEX

AND OF SYNTHETIC PRODUCTS HAVING SIMILAR ACTIONS

GEORGE W. THORN, M.D.
BALTIMORE

It is apparent that strikingly beneficial effects from adrenal cortical hormone therapy may be anticipated with certainty only in those patients who present conclusive evidence of adrenal cortical insufficiency. Thus far despite numerous studies in patients with extensive burns, infections and surgical shock only five clinical conditions definitely associated with adrenal insufficiency are well established: (1) Addison's disease, (2) chronic adrenal cortical insufficiency without characteristic changes in pigmentation, (3) pituitary myxedema, (4) Waterhouse-Friderichsen syndrome and (5) acute adrenal cortical insufficiency precipitated by surgical removal of adrenal tissue.

ADRENAL CORTICAL HORMONE

Physiologic Considerations.—It is now recognized that adrenal cortical hormone plays an important role in the regulation of (*a*) sodium chloride, potassium and water distribution in the body, (*b*) carbohydrate metabolism and (*c*) pigment metabolism. Sodium, chloride, potassium and water distribution in the body is affected by the action of adrenal cortical hormone on the reabsorption of these elements by the kidney tubule.[1] Thus, in the absence of adrenal hormone, sodium, chloride and water are lost in excess in the urine and potassium is retained in the body.[2] Ultimately this results in striking dehydration and reduction in blood plasma volume with attendant hemoconcentration. Administration of adequate quantities of potent adrenal cortical hormone results in increased tubular reabsorption of sodium, chloride and water and in increased renal excretion of potassium.[3] Plasma volume is restored, dehydration is corrected and normal concentrations of sodium, chloride and potassium are attained throughout the body.

Preservation of glycogen stores in the body and the maintenance of an adequate blood sugar level under fasting conditions are also aided by adrenal cortical hormone secretion. In normal subjects under conditions of starvation, carbohydrate stores are readily replaced by conversion of body protein to dextrose and glycogen. In the absence of adrenal cortical hormone this conversion takes place at a much slower rate, and body function may be impaired because of inadequate glycogen reserves.[4] Hypoglycemia may develop following a very short fast. In addition it can be shown that patients with adrenal cortical deficiency have a decreased rate of absorption of dextrose from the gastrointestinal tract, an apparent preference for burning carbohydrate and a lowered threshold at which signs and symptoms of hypoglycemia become evident.[5] Administration of adequate quantities of potent adrenal cortical hormone increases glycogen reserves, restores blood sugar level, lowers the fasting respiratory quotient, increases intestinal absorption of dextrose and corrects the lowered threshold at which signs and symptoms of hypoglycemia become evident.[6]

The majority of patients with Addison's disease (94 per cent) have increased pigmentation.[7] The abnormal pigmentation observed in these patients is occasioned by a deposition of increased quantities of normal melanin in the layers of the skin and mucous membranes.[8] The nature of the metabolic disturbance responsible for the increased deposits of normal pigment is not known, and there is as yet no convincing proof that any one of the hormone preparations now available is effective in correcting this abnormality completely. As plasma volume increases and as dehydration is corrected, patients appear distinctly lighter. This rather sudden and striking improvement in color should not be confused with actual changes in deposition of melanin.

It is probable that the hormone of the adrenal cortex exerts an effect on other body functions, including protein[9] and fat metabolism, although convincing proof of the latter has not yet been presented.

Chemical Considerations.—That adrenal cortical hormone preparations vary both quantitatively and qualitatively in their physiologic effect on body processes is of interest chemically and of great importance clinically. Certain data are now available concerning the relationship between chemical configuration and physiologic activity (fig. 1). It can be readily seen that the adrenal steroid corticosterone with an oxygen atom in the C_3, C_{11}, C_{20} and C_{21} positions is effective in correcting both mineral and carbohydrate disturbances in metabolism. Removal of the oxygen atom at position C_{11} (11-desoxycorticosterone) deprives the compound of its carbohydrate regulating activity but enhances its sodium and chloride retaining property. Addition of an oxygen atom at C_{17} (17-hydroxycorticosterone) increases carbohydrate regulating potency and decreases sodium and chloride retaining capacity. Indeed this latter compound may actually induce sodium and chloride loss under certain circumstances.[10] From a consideration of the preceding facts it is apparent that satisfactory regulation of sodium, chloride and carbohydrate metabolism in patients with adrenal cortical deficiency may be obtained by the administration of either corticosterone alone or an appropriate mixture of 11-desoxycorticosterone (sodium and chloride retaining) and 17-hydroxycorticosterone, compound E, Kendall (carbohydrate regulating).

This report was aided by a grant from the Committee on Research in Endocrinology, National Research Council.

From the Department of Medicine, Harvard Medical School, and the Medical Clinic, Peter Bent Brigham Hospital.

This paper, in a symposium on "The Practical Aspects of Endocrinology," is published under the auspices of the Section on Experimental Medicine and Therapeutics.

1. Harrison, H. E., and Darrow, D. C.: Renal Function in Experimental Adrenal Insufficiency, Am. J. Physiol. **125**: 631, 1939.
2. Loeb, R. F.: Effect of Sodium Chloride in Treatment of Patient with Addison's Disease, Proc. Soc. Exper. Biol. & Med. **30**: 808, 1933. Harrop, G. A.; Weinstein, Albert; Soffer, L. J., and Trescher, J. H.: Diagnosis and Treatment of Addison's Disease, J. A. M. A. **100**: 1850 (June 10) 1933.
3. Thorn, G. W.; Garbutt, H. R.; Hitchcock, F. A., and Hartman, F. A.: The Effect of Cortin on the Sodium, Potassium, Chloride, Inorganic Phosphorus and Total Nitrogen Balance in Normal Subjects and in Patients with Addison's Disease, Endocrinology **21**: 202, 1937.
4. Lukens, F. D. W., and Dohan, F. C.: Further Observations on the Relation of the Adrenal Cortex to Experimental Diabetes, Endocrinology **22**: 51, 1938. Long, Katzin and Fry.[9] Thorn, Koepf, Lewis and Olsen.[5]
5. Thorn, G. W.; Koepf, G. F.; Lewis, R. A., and Olsen, E. F.: Carbohydrate Metabolism in Addison's Disease, J. Clin. Investigation **19**: 813, 1940.
6. Lewis, R. A.; Kuhlman, D.; Delbue, C.; Koepf, G. F., and Thorn, G. W.: The Effect of the Adrenal Cortex on Carbohydrate Metabolism, Endocrinology **27**: 971, 1940. Thorn, Koepf, Lewis and Olsen.[5]
7. Thorn, G. W.; Dorrance, S. S., and Day, E.: Addison's Disease: Evaluation of Synthetic Desoxycorticosterone Acetate Therapy in One Hundred and Fifty-Eight Patients, Ann. Int. Med. **16**: 1053, 1942.
8. Rowntree, L. G., and Snell, A. M.: A Clinical Study of Addison's Disease, Philadelphia, W. B. Saunders Company, 1931.
9. Long, C. N. H.; Katzin, B., and Fry, E. G.: The Adrenal Cortex and Carbohydrate Metabolism, Endocrinology **26**: 309, 1940.
10. Thorn, G. W.; Engel, L. L., and Lewis, R. A.: The Effect of 17-Hydroxycorticosterone and Related Adrenal Cortical Steroids on Sodium and Chloride Excretion, Science **94**: 348, 1941.

Since Reichstein[11] recently has succeeded in preparing steroid compounds with an oxygen atom on C_{11} position, it should be only a relatively short time before such substances as corticosterone and 17-hydroxycorticosterone (compound E) are made available for clinical use.

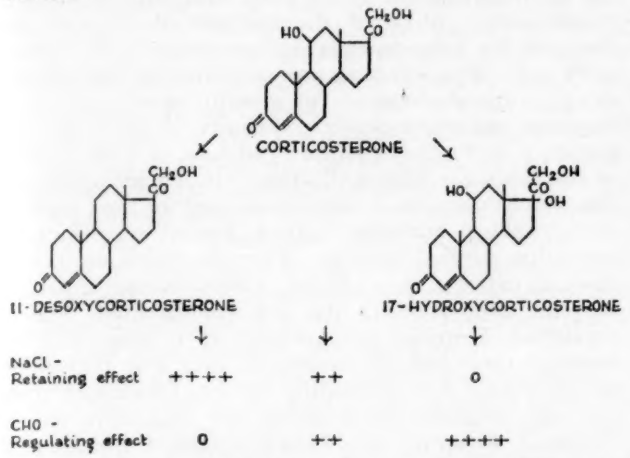


Fig. 1.—Adrenal steroids: relationship of chemical configuration to physiologic ativity.

It appears that the activity of potent adrenal cortex extracts derived from natural sources (adrenal glands) is due to the presence in these extracts of a mixture of several of the adrenal steroid compounds.[12] It is obvious that commercially available extracts may vary widely in their content of the several active constituents, and hence the activity of these preparations is unpredictable unless they are standardized against known quantities of crystalline hormone. Thus far no adrenal cortical extract available commercially is so standardized. Recently, however, the Upjohn Company has made available for limited clinical investigation an extract of adrenal cortex dissolved in oil and standardized against corticosterone and 17-hydroxycorticosterone. It is hoped that other extracts may ultimately be similarly standardized.

Because of the lack of standardization of extracts derived from natural sources and because of the high cost of these extracts, the only crystalline adrenal hormone preparation, synthetic desoxycorticosterone, which is available commercially has received wide clinical trial. This preparation is very potent in its sodium and chloride retaining effect; it is lacking, however, in "carbohydrate regulating" power (fig. 1).

Desoxycorticosterone Acetate.—The complications[13] which have arisen in conjunction with the use of desoxycorticosterone acetate have largely been the result of failure to appreciate the very potent sodium and chloride retaining effect of this compound and its inability to correct the fundamental disturbance in carbohydrate metabolism.[5]

ADRENAL CORTICAL INSUFFICIENCY

Diagnosis.—I. Addison's Disease and Chronic Adrenal Insufficiency: These two conditions are synonymous with the exception that classic cases of Addison's disease in general represent a more severe or more advanced form of deficiency and present typical changes in pigmentation in addition to the usual signs and symptoms indicative of adrenal insufficiency (table 1). Of particular aid in diagnosis are (1) the presence of weakness and fatigability, (2) weight loss, (3) hypotension, (4) a heart smaller than normal and (5) increasing pigmentation. Five types of abnormal pigmentation are frequently observed in patients with Addison's disease:

1. Bluish black discoloration on lips, on gums and on buccal, rectal and vaginal surfaces.
2. A diffuse tan over the nonexposed as well as the exposed portions of the body.
3. Hyperpigmentation of extensor surfaces of the body, pressure points, scars and so on.
4. Multiple black freckles, especially on the forehead, face, neck, shoulders and arms.
5. Areas of vitiligo.

Weight loss is uniformly present in patients with advancing adrenal cortical insufficiency. Hypotension depends to some extent on the level of blood pressure prior to the onset of adrenal insufficiency. Thus, not infrequently, blood pressure is observed within normal range, owing to the fact that the patient actually had a moderate degree of hypertension antedating the onset of the deficiency. A teleoroentgenogram with measurement of the heart size is of great value in diagnosis; I have never encountered an uncomplicated case of advancing adrenal cortical insufficiency in which the heart size exceeded the predicted normal for height and weight of the patient.[14] The basal metabolic rate of patients with adrenal cortical deficiency ranges between —10 per cent and —20 per cent. Values lower than —20 per cent usually indicate associated thyroid or anterior pituitary deficiency (see pituitary myxedema). Since approximately 50 per cent of all patients with Addison's disease have tuberculosis of the adrenals as the etiologic factor responsible for the disease, the demonstration of healed or active tuberculosis greatly increases the probability of the diagnosis, particularly if urogenital tuberculosis is present. Normal values for 17-ketosteroid excretion are of great value in eliminating the diagnosis of Addison's disease. Low values, although characteristic of adrenal cortical insufficiency, are not specific, particularly for patients who are eating poorly and are undernourished. Low serum sodium and chloride values are rarely encountered except in patients with far advanced deficiency nearing a crisis. The response to the Kepler-Power water test is

TABLE 1.—*Signs and Symptoms Associated with Adrenal Cortical Insufficiency*

1. Weakness and fatigability
2. Loss of weight
3. Increasing pigmentation
4. Hypotension
5. Anorexia, nausea or vomiting
6. Heart size less than predicted normal
7. Hypometabolism
8. Presence of healed or active tuberculosis
9. Decreased 17-ketosteroid excretion
10. Decreased serum sodium and chloride concentration
11. Characteristic response to Kepler-Power water test
12. Hypoglycemia following intravenous administration of dextrose
13. Characteristic response to hormone therapy

11. Lardon, A., and Reichstein, T.: The Synthesis of Adrenal Steroid Compounds with 11 Oxygen, Helvet. chim. acta **26:** 705, 1943.
12. Kendall, E. C.: The Function of the Adrenal Cortex, in Glandular Physiology and Therapy, Chicago, American Medical Association Press, 1942, chapter 18.
13. Ferrebee, J. W.; Ragan, Charles; Atchley, D. W., and Loeb, R. F.: Desoxycorticosterone Esters: Certain Effects in the Treatment of Addison's Disease, J. A. M. A. **113:** 1725 (Nov. 4) 1939. Thorn, Dorrance and Day.[7]
14. Ungerleider, H. E., and Clark, C. P.: Study of Transverse Diameter of the Heart Silhouette with Prediction Table Based on the Teleoroentgengram, Am. Heart J. **17:** 92, 1939.

extremely helpful; again, a normal response is of great value in eliminating adrenal cortical insufficiency. Hypoglycemia can frequently be induced by the intravenous administration of dextrose to patients with well advanced adrenal cortical insufficiency.[15] Finally, the response to specific hormone therapy, with appropriate control periods during which hormone therapy is discontinued, is of great value. Patients should show a striking increase in weight and blood pressure, the latter returning toward normal much more slowly than the former. The Wilder test (sodium chloride withdrawal in the presence of added potassium) is a very severe test with great danger to many patients. I never employ this test when the diagnosis of Addison's disease is fairly apparent. It is an extremely useful test to employ for patients whose weakness and fatigability appear to have no obvious organic basis.

II. Pituitary Myxedema: Means[16] and Williams[17] have clearly shown that certain patients with myxedema, on receiving adequate thyroid medication, develop signs and symptoms indicative of adrenal insufficiency. Prophylactic therapy with adrenal cortical hormone and sodium chloride prevents the development of insufficiency and permits patients to tolerate adequate doses of thyroid hormone. These patients have a characteristic facies[18] and their basal metabolic level (— 25 to — 45 per cent) is considerably below that which occurs in uncomplicated chronic adrenal cortical insufficiency. Blood cholesterol may be elevated and hypogonadism is frequently present. Failure to recognize the underlying adrenal cortical insufficiency in these patients with thyroid and pituitary insufficiency may result in a catastrophe when thyroid hormone is administered.

III. Waterhouse-Friderichsen Syndrome: Acute collapse associated with bilateral hemorrhage into the adrenals is a clinical syndrome occasionally encountered in severe septicemia—especially meningococcemia and staphylococcemia. It rarely occurs in the absence of evidence of rather severe, generalized hemorrhagic manifestations. This syndrome may be confused with collapse resulting from the toxemia of overwhelming infection. Recently Thomas,[19] in reporting an epidemic of meningococcic infection in troops, noted that hemorrhages into the adrenals were present in 17 of 23 fatal cases in which autopsy was performed. The diagnosis of Waterhouse-Friderichsen syndrome was suspected in many of these patients. It is obvious that large quantities of hormone must be given quickly if any hope of success is to be entertained.

IV. Acute Adrenal Cortical Insufficiency Associated with Surgery of the Adrenals: Removal of an adrenal tumor and operative procedures designed to reduce the quantity of functioning adrenal cortical tissue not infrequently precipitate acute adrenal cortical insufficiency. Evidences of an inadequate supply of hormone develop most commonly within the twenty-four to twenty-eight hours following operation. In contrast, acute adrenal medullary insufficiency following the removal of a pheochromocytoma for hypertension manifests itself instantaneously.

15. Lewis, Kuhlman, Delbue, Koepf and Thorn.[6] Thorn, Dorrance and Day.[7]
16. Means, J. H.; Hertz, S., and Lerman, J.: The Pituitary Type of Myxedema or Simmonds' Disease Masquerading as Myxedema, Tr. A. Am. Physicians **55**: 32, 1940.
17. Williams, R. H., and Whittenberger, J. L.: Treatment of Simmonds' Disease, J. Clin. Endocrinol. **2**: 539, 1942.
18. Means, Hertz and Lerman.[16] Williams and Whittenberger.[17]
19. Thomas, Henry M., Jr.: Meningococcic Meningitis and Septicemia: Report of Outbreak in Fourth Service Command During Winter and Spring of 1942-1943, J. A. M. A. **123**: 264 (Oct. 2) 1943.

ADRENAL CORTICAL HORMONE

Preparations.[20]—I. Adrenal Cortical Extracts: An extract of fresh beef adrenals constitutes the basis of the majority of preparations now available commercially. Extracts for oral use should never be relied on in the treatment of patients with adrenal cortical insufficiency. Most of the commercial extracts are designed for subcutaneous, intramuscular and intravenous use. The extracts are standardized biologically (e. g., adrenalectomized rat growth curve); in other instances the corresponding quantity of fresh adrenal gland (i. e. 1 cc. of extract = 40 Gm. of fresh gland) is the basis for standardization. In no instances are commercially available extracts assayed for their content of crystalline hormone against known quantities of crystalline adrenal steroids. Since the widely used commercial extracts, i. e. Parke, Davis, Roche-Organon, Upjohn and Wilson, are not standardized against crystalline hormone preparations, it is impossible to compare their potency accurately, and it is impossible to be certain that succeeding batches of extract from any one pharmaceutical house are equivalent in all respects. From my own clinical studies it appears that Parke, Davis's Eschatin, Upjohn's aqueous adrenal cortex extract and Wilson's adrenal cortex extract are approximately equivalent on a cubic centimeter basis. At least one notes no remarkable change in clinical condition on alternating any of these three preparations.

Adrenal cortex extract may be given intravenously in an emergency. However, this is not a satisfactory method for continued administration. Extracts are usually administered into the deep subcutaneous tissues, and since the maximum action following a single injection is four to six hours, optimum effect is obtained by dividing the daily dose and, if possible, administering extract subcutaneously every six to eight hours. Correspondingly larger doses of extract are required if the total twenty-four hour dose is given at one time. Most patients with severe adrenal cortical insufficiency, if maintained on adrenal extract, will require 20 to 30 cc. daily; if supplementary sodium chloride is given, 10 to 20 cc. daily may be adequate.[21] Since no overdosage phenomena have ever been observed following the administration of adrenal cortex extracts, the quantity employed is determined by (*a*) the cost of the preparation (10 to 30 cc. per day costs approximately $3 to $10 daily), (*b*) the willingness of the patient to take repeated daily injections regularly and (*c*) the concentration and the nature of the preservative employed when large quantities of extract are administered for prolonged periods.

Again, it should be pointed out that, although the potency of available extracts is relatively low, the

20 Excerpt from a report of the Council on Pharmacy and Chemistry (J. A. M. A. **123**: 351 [Oct. 9) 1943):

ADRENAL CORTEX EXTRACT

Source: Adrenal gland of animals. Assay: Biologic units (1 cc. of extract is derived from 40 Gm. of fresh gland).

PRODUCT AND FIRM
Adrenal Cortex Extract. Upjohn.
Adrenal Cortex Extract. Wilson Laboratories.
Eschatin. Parke, Davis.

DESOXYCORTICOSTERONE ACETATE

Source: Synthetic. Assay: Weight.

PRODUCT AND FIRM
Cortate. Schering.
Doca. Roche-Organon.
Percorten. Ciba.

21. Thompson, W. O.: Addison's Disease; Recent Contributions to Treatment, J. Michigan M. Soc. **39**: 648, 1940.

extracts are effective in regulating both mineral and carbohydrate metabolism when administered in adequate quantities. Furthermore, there is as yet no evidence of toxic overdosage phenomena.

II. Crystalline Adrenal Cortical Hormone preparations: All crystalline hormone preparations now available commercially are composed of one and the same substance; i. e., synthetic desoxycorticosterone acetate. This is prepared in oil solution (1 cc. = 5 mg. of crystalline hormone): Ciba Pharmaceutical Products, Inc., Percorten; Roche-Organon, Inc., Doca; Schering Corporation, Cortate. In addition, 125 mg. pellets of crystalline hormone (Ciba-Percorten) are available commercially for subcutaneous implantation. Desoxycorticosterone acetate has been prepared in propylene glycol and as tablets for sublingual use. However, neither of these preparations is available commercially at present. The hormone requirement when administered sublingually is at least three times as great as the dose when injected intramuscularly.[22]

Because the commercially available preparations of desoxycorticosterone acetate are composed of crystalline hormone, standardization is simple. The only essential difference between the several commercial preparations in oil is the type of oil used. This requires some consideration, since patients occasionally may become sensitive to the oil in which the hormone is dissolved.[23]

Desoxycorticosterone acetate exerts a very potent sodium and chloride retaining effect and, as has been previously mentioned, is lacking in the carbohydrate regulating factor. Excessive salt and water retention represents a real danger to patients given large quantities of synthetic desoxycorticosterone acetate, since hypertension, cardiac enlargement and pulmonary edema may occur.[13] At the same time hypoglycemia may also be observed if for any reason patients under treatment with desoxycorticosterone acetate fail to eat regularly. Thus the problem in desoxycorticosterone acetate therapy is to provide an adequate quantity of hormone, to prevent excessive retention of sodium and chloride and to provide for a liberal carbohydrate intake. In the presence of nausea, vomiting or infection, supplementary adrenal cortical extract (in relatively large doses) must be given.

Pellets of synthetic desoxycorticosterone acetate may be implanted as an effective substitution for daily injection of the hormone in oil. If the daily hormone requirement has been accurately determined, the required number of pellets can be estimated easily. One pellet (125 mg.) should be implanted for each 0.5 mg. of hormone required daily. Example: A patient requiring 2.5 mg. of hormone in oil daily would need five pellets. Pellets (125 mg. of Percorten—standardized) will provide a continuous source of hormone for nine to fifteen months.[7] Patients should never receive pellets until their daily hormone requirement has been carefully established. Implantation is easily accomplished under local anesthesia. An incision is made and the pellets are implanted directly or through a trocar. In either event the pellets should be placed at least 2 cm. from the line of the incision to prevent extrusion.

22. Thorn, G. W.; Greif, R. L.; Coutinho, S. O., and Eisenberg, H.: Relative Effectiveness of Several Methods of Administering Desoxycorticosterone Acetate, J. Clin. Endocrinol. **1**: 967, 1941.

23. Thorn, G. W.; Howard, R. P., and Emerson, K., Jr.: Treatment of Addison's Disease with Desoxycorticosterone Acetate, a Synthetic Adrenal Cortical Hormone (Preliminary Report), J. Clin. Investigation **18**: 449, 1939.

CLINICAL USE OF ADRENAL CORTICAL HORMONE PREPARATIONS

I. *Treatment of Adrenal Crisis.*—Impending or actual adrenal crisis represents the most urgent need for hormone and supplementary therapy. A crisis may occur in patients with Addison's disease or chronic adrenal insufficiency as the result of intercurrent infections, in patients with "pituitary myxedema" following the institution of thyroid therapy, in septicemia as described under the Waterhouse-Friderichsen syndrome[19] or following surgery on the adrenals. The principle of treatment in all instances is the same: Massive therapy must be given quickly. In the presence of infection, specific chemotherapy is given in addition. The aims of therapy may be summarized as follows:

1. Support of plasma volume and blood pressure by:

(*a*) Intravenous infusion of sodium chloride (0.9 per cent solution) and dextrose (5 to 10 per cent solution).

(*b*) Aqueous adrenal cortext extract (intravenously and subcutaneously) in large quantities.

(*c*) Synthetic desoxycorticosterone acetate in oil (intramuscularly).

(*d*) Epinephrine in oil (0.5 cc.) intramuscularly if systolic blood pressure falls below 90 mm. of mercury.

2. Prevention of hypoglycemia:

(*a*) Infusions of dextrose and saline solution in conjunction with adrenal cortex extract.

(*b*) Frequent feedings of readily available carbohydrate as soon as tolerated.

(*c*) Large quantities of adrenal cortex extract (1 *b*).

3. Antibacterial chemotherapy whenever indicated.

4. Plasma and whole blood transfusions if other measures fail to support the circulation.

Suggested Outline of Therapy.—1. The patient is kept quietly in bed and is immediately given an intravenous infusion of 1,000 to 1,500 cc. of sodium chloride 0.9 per cent and dextrose 5 to 10 per cent. All unnecessary examinations are deferred. Morphine is contraindicated. A second infusion of saline solution and dextrose is repeated in six to twelve hours and subsequently at least once daily until the temperature has reached normal and the patient is taking fluids and eating well.

2. Twenty-five cc. of aqueous adrenal cortex extract is added to the first intravenous infusion and in addition 10 cc. of extract is injected subcutaneously. The subcutaneous injection of 5 to 10 cc. of aqueous extract (Parke, Davis, Roche-Organon, Upjohn or Wilson) is repeated every two to four hours until fever subsides, then every four to eight hours until the patient is eating well.

3. Twenty mg. of desoxycorticosterone acetate in oil is injected intramuscularly in divided doses immediately; and thereafter 5 to 10 mg. is given once daily depending on blood pressure, quantity of saline solution which has been administered, appearance of excessive fluid retention and other factors.

4. One cc. of epinephrine in oil injected intramuscularly or 0.5 cc. epinephrine (aqueous) is indicated if the level of systolic blood pressure falls below 90 mm. of mercury.

5. Blood pressure determinations are made at intervals of one to two hours, day and night. Small quantities of fruit juice with added lactose or ginger ale are given at frequent intervals if tolerated. Since 1,500 cc. of saline and dextrose solution is given intravenously at eight to twelve hour intervals, additional fluid or sodium chloride by mouth is not essential during the first

twenty-four hours of treatment. A fall in blood pressure without signs of excessive sodium chloride and water retention is a definite indication for increasing the infusions of sodium chloride and for giving additional desoxycorticosterone acetate intramuscularly (5 to 10 mg.). A fall in blood pressure in the presence of excessive sodium chloride and water retention is a definite indication for reducing the number of infusions, for discontinuing the desoxycorticosterone acetate therapy and for increasing the quantity of adrenal cortex extract, i. e. 10 cc. every hour. At this time a plasma transfusion should be seriously considered.

TABLE 2.—*Daily Hormone Requirement of Synthetic Desoxycorticosterone Acetate in Sesame Oil: 141 Patients with Addison's Disease* *

Daily Dose of Hormone, Mg.	Number of Patients	Per Cent of Total
0-3	73	51
3-5	56	40
5-10	8	6
10+	4	3

* Patients were given 3 mg. of sodium chloride daily in addition to unrestricted sodium chloride in diet.

II. *Treatment of Addison's Disease and Chronic Adrenal Insufficiency.*—A small proportion of patients with Addison's disease or chronic adrenal insufficiency may be maintained in relatively good health by means of sodium chloride therapy alone. However, it is my opinion that, once the diagnosis of adrenal insufficiency is well established, patients are better off if they are being maintained with supplementary hormone. A few patients will be able to afford adrenal cortex extract and, if willing, can be maintained in good condition with 15 to 20 cc. of extract daily, preferably given in divided doses every eight hours.[21] Any one of the adrenal cortical extracts available for parenteral use is satisfactory. It is usually helpful to give additional sodium chloride 3 to 6 Gm. (1 Gm. enteric coated sodium chloride tablets) daily. In the presence of infection or any other complications it is desirable to supplement extract therapy with daily injections of synthetic desoxycorticosterone acetate.

For practical purposes most patients will be treated with desoxycorticosterone acetate; this form of therapy may be supplemented during the course of intercurrent infections with supplementary adrenal cortex extract. As is the case with extract, the requirement of desoxycorticosterone acetate may be reduced significantly by the addition of supplementary sodium chloride medication. However, in this case, because of its very potent sodium and chloride retaining effect, the use of sodium chloride must be watched with extreme care. In fact, some clinicians prefer not to use sodium chloride in conjunction with desoxycorticosterone acetate. All agree that only small quantities of sodium chloride should be administered.

The daily desoxycorticosterone acetate requirement of over 90 per cent of patients with Addison's disease is 5 mg. or less when 3 Gm. of supplementary sodium chloride medication is employed (table 2). It is my practice to begin therapy with 2.5 mg. of desoxycorticosterone acetate injected once daily and a 1 Gm. tablet of sodium chloride (enteric coated) three times daily with meals. The weight, blood pressure and clinical state should be watched carefully. If treatment is adequate, weight gain will occur at once. If no gain in weight occurs after three days of therapy, the dose of hormone should be increased to 3.5 to 4.0 mg. daily. If weight gain exceeds 0.5 Kg. daily, the dose of hormone should be reduced. The appearance of puffiness under the eyes or edema of the ankles or other parts of the body is a definite indication for reducing the quantity of hormone despite the patient's clinical state. Blood pressure may rise quickly from very low levels, but it may require weeks for the blood pressure to attain a normal level. All patients should have a roentgenogram of the heart, and, if possible, heart size should be followed carefully during the first few months of therapy. Patients usually feel much improved after the first week or two of therapy. When weight gain is rapid or edema appears the dose of desoxycorticosterone acetate must be reduced to avoid serious consequences. Infections increase the hormone requirement, and occasionally the first indication of an active tuberculous process is a rising hormone requirement. In this respect adrenal cortical hormone therapy is similar to insulin in the care of diabetic patients. As is so commonly the case in diabetes, the hormone requirement may decrease considerably after treatment has been continued for some period.

The desirability of implanting pellets of crystalline hormone may be considered after a patient has been maintained in good condition on a constant daily dose of hormone in oil for a period of two to three months. At present the only standardized pellets available commercially are Percorten pellets prepared by the Ciba Pharmaceutical Products, Inc. For these particular pellets (125 mg. each) it has been determined that one pellet implanted subcutaneously will substitute successfully for 0.5 mg. of hormone injected once daily. It is obvious that these figures do not necessarily hold for pellets prepared by other methods or other pharmaceutical houses. In all instances 3 Gm. of sodium chloride medication was given daily during the period of hormone therapy prior to the implantation of pellets. The supplementary sodium chloride provides a balancing mechanism which can be used after pellets are implanted to compensate for any temporary excess of hormone.

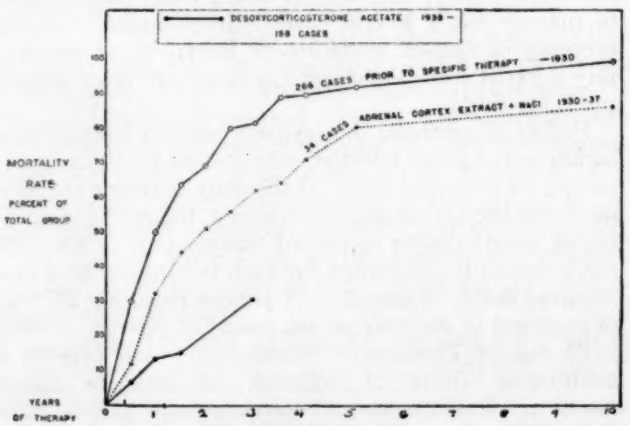

DESOXYCORTICOSTERONE ACETATE 1938 –
198 CASES
266 CASES PRIOR TO SPECIFIC THERAPY —1930
ADRENAL CORTEX EXTRACT + NaCl 1930-37
MORTALITY RATE PERCENT OF TOTAL GROUP
YEARS OF THERAPY

Fig. 2.—Mortality rate in Addison's disease.

Pellets weighing 125 mg. each provide effective therapy in most patients for a period of at least twelve months. The fact that pellets are no longer providing an adequate supply of hormone is first indicated in most instances by a gradual reduction in blood pressure. Later fatigue and loss of weight and appetite are observed. In most instances, however, as soon as the reduction in blood pressure is noted, without awaiting the further development of symptoms of adrenal insuffi-

ciency, the patient is given intramuscular injections of hormone. One injection of 2 to 5 mg. (0.4 to 1.0 cc.) of desoxycorticosterone acetate twice weekly is adequate for most patients at this time. Later daily injections of the hormone are resumed and a new assay is conducted. Three Gm. of sodium chloride daily is administered during this new assay period. When the maintenance hormone requirement has again been ascertained, and when it is certain that little, if any, of the original pellets remain, new pellets are implanted. New pellets of desoxycorticosterone are never implanted arbitrarily at the end of one year, on the basis of the original assay for two reasons: 1. Patients' hormone requirement may change considerably during a year of sustained therapy. 2. In many patients at the end of twelve months there is still an appreciable quantity of hormone which is being absorbed from the original pellets and which would lead to overdosage if supplemented by a full complement of new pellets. In most patients supplementary injections of hormone in oil are not required during the first twelve months subsequent to the initial pellet implantation.

Technic of Pellet Implantation: The infrascapular region posteriorly is usually selected for pellet implantation. Strict asepsis is observed. The operative field is prepared with iodine and alcohol and the site of incision is infiltrated with procaine, 1:200 solution. A transverse incision 2 to 4 cm. in length is made a few centimeters below the inferior spine of the scapula. With blunt dissection a number of small pockets, 2 to 3 cm. in depth, are prepared in the subcutaneous tissues. The opening of each pocket is held far enough apart by a nasal dilator to permit pellets to be dropped gently to the bottom of the pocket without the use of force. This is important, for if the opening into the pocket is too small the fragile pellet can easily be crushed by the force used to insert it; furthermore, if the pocket is not deep enough the pellet may be extruded subsequently through the incision. The wound is closed with subcuticular stitches of fine black silk. It is possible to insert as many as ten to fifteen pellets through a single incision. Di Maio [24] has recently described a modification of this technic which has the advantage of a smaller incision. A trocar is employed to implant the pellets in a row at some distance from the margin of the incision.

Results of Treatment and Prognosis: At present most patients with Addison's disease can be maintained in relatively good condition with appropriate dosage of desoxycorticosterone acetate supplemented with adrenal cortex extract in emergencies. Patients with active tuberculosis obviously have a poor prognosis. With all other patients the constant danger of intercurrent infections must be borne in mind. The results of therapy in a group of 158 patients with Addison's disease who have been followed for an average period of three years are presented in figure 2. All these patients received desoxycorticosterone acetate therapy, and, in 148, pellets of crystalline desoxycorticosterone acetate have been implanted subcutaneously. Adrenal cortex extract has been used in emergencies or crises induced by intercurrent infections. Five patients have received supplementary adrenal cortex extract (3 to 10 cc.) daily for long periods of time. Prior to 1930 the average duration of life expectancy was one to two years after the diagnosis of Addison's disease had been made, and at the end of three years 80 per cent of the patients had succumbed. The figures for patients treated with adrenal cortex extract and sodium chloride (1930-1937) represent adequate treatment with sodium chloride, but obviously inadequate hormone was given. In the group of 158 patients who have been treated with desoxycorticosterone acetate [7] supplemented with adrenal cortex extract in emergencies only 30 per cent had succumbed at the end of three years of therapy, in contrast to a figure of 80 per cent mortality in the same period prior to 1930.

It is probable that further great advances in therapy will be made when a synthetic adrenal steroid with an oxygen atom on C_{11} becomes available for clinical use. Such a preparation should result in definite improvement in carbohydrate metabolism and in increased muscular efficiency.

24. Di Maio, M., and Bird, C. E.: Pellet Implantation: The Subcutaneous Implantation of Crystalline Pellets of Hormone, New England J. Med. **228**: 390, 1943.

THE CLINICAL USE OF EXTRACTS FROM THE TESTES

AND OF SYNTHETIC PRODUCTS HAVING SIMILAR ACTIONS

WILLARD O. THOMPSON, M.D.
CHICAGO

PHYSIOLOGY

The testis has two functions: (1) the production of spermatozoa by the seminiferous tubules and (2) the production of male sex hormone by the interstitial cells of Leydig. There may be some dissociation of these two functions. Thus an adult male with bilateral cryptorchism may show fairly normal sexual development but be sterile. In most instances, however, testes which do not produce spermatozoa produce deficient quantities of male sex hormone, and several observers [1] have presented evidence which suggests that the seminiferous tubules may contribute to the production of hormone. The sex hormones are responsible for the development of the secondary sex characteristics, which in the male include: [2]

1. Growth of the external genitalia.
2. Growth and function of the prostate.
3. Masculine distribution of hair.
4. Lowering of the pitch of the voice.
5. Normal configuration of the skeleton, with normal proportions between the trunk and extremities and between the shoulders and hips.
6. Increase in the size and firmness of the muscles.
7. Normal emotional reactions.

An intimate relationship exists between the anterior lobe of the pituitary and the gonads. The pituitary influences gonadal function by the production of gonadotropins and is in turn inhibited by male and female sex hormones which are secreted by the gonads. There are at least two gonadotropic effects of the pituitary which may be related to the production of distinct gonadotropic materials. One is follicle stimulating and causes the development of graafian follicles in the ovary and influences the function of the seminiferous tubules in the testis. The other is luteinizing and causes luteinization of the developing follicles in the ovary and stimu-

From the Department of Medicine, University of Illinois College of Medicine, and the Presbyterian Hospital.
This paper, in a symposium on "The Practical Aspects of Endocrinology," is published under the auspices of the Section on Experimental Medicine and Therapeutics.

1. Moore, C. R.: Physiology of the Testis, in Glandular Physiology and Therapy, Chicago, American Medical Association Press, 1942, chapter 16.
2. Thompson, W. O., and Heckel, N. J.: Sex Hormones: Clinical Application, Rhode Island M. J. **24**: 145, 1941.

lates the interstitial cells of the testis to produce male sex hormone. In most glands of internal secretion, states of hypofunction and hyperfunction are clearly defined. In the case of the testis, clearcut examples of hyperfunction have not been described. Hypofunction, however, is common and may be of two types:

1. Primary, resulting from castration, injury or disease; for example, the orchitis of mumps.
2. Secondary, usually the result of hypopituitarism.

In the same way, two types of treatment are possible:

1 Stimulation therapy with gonadotropins.
2. Substitution therapy with male sex hormone.

STIMULATION AND SUBSTITUTION THERAPY

Three types of gonadotropin are available for stimulation therapy:

1. Pituitary gonadotropin from the pituitary itself.
2. Equine gonadotropin from the serum of the pregnant mare.
3. Chorionic gonadotropin from the urine of pregnant women.

Pituitary and equine gonadotropin are theoretically desirable because they contain both follicle-stimulating and luteinizing material but in actual practice they are not very effective. Chorionic gonadotropin is very effective, although it has the disadvantage that it is luteinizing in nature and therefore influences primarily the production of male sex hormone and has little effect on spermatogenesis. It was isolated from the urine of pregnant women about sixteen years ago by Aschheim and Zondek [3] and forms the basis of their test for pregnancy. It was originally called an anterior pituitary-like substance because it simulated the gonadotropic action of the pituitary. It was eventually given the name of chorionic gonadotropin because of its origin in the chorionic villi of the placenta. It is available under a variety of trade names: Follutein (Squibb), Korotrin (Winthrop), A. P. L. (Ayerst, McKenna & Harrison), Pranturon (Schering), Antuitrin-S (Parke, Davis), Pregnyl (Roche-Organon), Anterior Pituitary-like Gonadotropic Hormone (Lakeside Laboratories), Anterior Pituitary-like Sex Hormone (Hospital Liquids: U. S. Standard Products), Entomone (Endo Products), Gestasel (National Drug).

The most effective agent for substitution therapy is testosterone propionate. Although it was known from the experiments of Berthold [4] in 1849 that the testis has an internal secretion, great difficulty was encountered in extracting it from the testis because so little is present at any one time. It is very active, quickly utilized and not stored in appreciable quantities in the testis or elsewhere. The hormone is a steroid and therefore not water soluble. In 1927 McGee [5] obtained a potent extract from bull testes by using lipoid solvents and assayed them by their influence on the comb of the capon, which still is the most valid method of assay. It has been estimated that 1 ton of testes contains only from 90 to 270 mg. of hormone. Shortly after the work of Aschheim and Zondek,[3] a search was made for various hormones in urine and two androgenic substances, androsterone [6] and dehydroandrosterone,[7] were found in human male urine. These materials were quickly identified and synthesized.[8] It was soon found by Laqueur [9] that concentrates from bull testes were from five to ten times as potent per units of weight as crystalline androsterone and that the two were different chemically. The discrepancy was explained in 1935, when David and his associates [10] isolated a much more active androgen, testosterone, from the testis. This material was promptly synthesized from cholesterol by both Butenandt [11] and Ruzicka.[12] Testosterone is the most potent androgenic substance isolated thus far, and the true male sex hormone is thought to be some form of this material. Certain esters of testosterone are more potent than testosterone itself, and in clinical medicine testosterone propionate is most commonly used. Since the isolation of androsterone, dehydroandrosterone and testosterone, about forty related substances with male sex hormone characteristics have been prepared synthetically by the degradation of sterols, but these are not used clinically. For therapeutic purposes testosterone is made synthetically. Since it is a very potent substance of known composition, extracts of the testis have no place at present in treatment. Commercial preparations of testosterone propionate are Oreton (Schering), Perandren (Ciba) and Neo-Hombreol (Roche-Organon). This material is administered parenterally in oil. Recently methyl testosterone has been prepared, which possesses the advantage of being effective by mouth. It is less potent than testosterone propionate and is usually not used in the initial stages of therapy.

The treatment of hypogonadism in the male is therefore limited at the present time to the use of two substances, namely chorionic gonadotropin and some form of testosterone.

INDICATIONS FOR STIMULATION THERAPY (CHORIONIC GONADOTROPIN)

There are two main indications for stimulation therapy:

1. Undescended testes.
2. Hypogonadism secondary to hypopituitarism, including the Fröhlich syndrome.

Undescended Testes.—The testes may fail to descend because of some hormonal deficiency or because of some mechanical defect along the path of descent. In many patients in whom a hormonal deficiency is present the testes will descend at the time of puberty without treatment. Careful study of the data available [13] indicates that glandular therapy causes the descent only of those testes which would descend at the time of puberty without treatment. However, it is felt that glandular

3. Aschheim, S., and Zondek, B.: Die Schwangerschaftsdiagnose aus dem Harn durch Nachweis des Hypophysenvorderlappenhormons, Klin. Wchnschr. **7**: 1404, 1928.
4. Berthold, A. A.: Transplantation der Hoden, Arch. f. Anat., Physiol. u. wissensch. Med., 1849, p. 42.
5. McGee, L. C.: The Effect of the Injection of a Lipoid Fraction of Bull Testicle in Capons, Proc. Inst. Med. Chicago **6**: 242, 1927.
6. Butenandt, A.: Ueber die Chemie der Sexualhormone, Ztschr. f. angew. Chem. **45**: 655, 1932.
7. Butenandt, A., and Dannenbaum, H.: Ueber Androsterone: III. Isolierung eines neuen physiologisch unwirksamen Sterin-derivatives aus Mannerharn, seine Verknauppfung mit Dehydroandrosterone und Androsterone, Ztschr. f. physiol. Chem. **229**: 192, 1934.
8. Butenandt, A., and Tscherning, K.: Ueber Androsteron; ein krystallisiertes männliches Sexualhormon: II. Seine chemische Charakterisierung, Ztschr. f. physiol. Chem. **229**: 167 and 185, 1934. Ruzicka, L.; Goldberg, M. W.; Meyer, I.; Brungger, H., and Eichenberger, E.: Ueber die Synthese der Testikelhormons (Androsterone) und Stereoisomerer desselben duch Abbau hydrierter Sterine, Helvet. chim. acta **17**: 1395, 1934.
9. Laqueur, E.; David, K.; Dingemanse, E., and Freud, J.: Ueber männliches Hormon: Unterschied von Androsteron aus Harn und Testosteron aus Testis, Acta brev. Neerland. **5**: 84, 1935.
10. David, K.; Dingemanse, E.; Freud, J., nd Laqueur, E.: Ueber krystallinisches männliches Hormon aus Hoden (Testosteron), wirksamer als aus Harn oder aus Cholesterin bereitetes Androsteron, Ztschr. f. physiol. Chem. **233**: 281, 1935.
11. Butenandt, A., and Hanisch, G.: Ueber Testosteron: Umwandlung des Dehydro-androsterons in Androstendiol and Testosteron, Ztschr. f. physiol. Chem. **237**: 89, 1935.
12. Ruzicka, L., and Wettstein, A.: Ueber die künstliche Herstellung des Testikelhormons Testosteron, Helvet. chim. acta **18**: 1264, 1935.
13. Thompson, W. O., and Heckel, N. J.: Undescended Testes: Present Status of Glandular Therapy, J. A. M. A. **112**: 397 (Feb. 4) 1939; Endocrine Treatment of Cryptorchism, ibid. **117**: 1953 (Dec. 6) 1941.

therapy is very important in the treatment of this condition for the following reasons:

1. The testis cannot function properly except in the environment of the scrotum. There is every reason to believe that the earlier it is placed in its normal environment the greater its chance of normal function.

2. Glandular therapy makes it possible to determine at an early age whether or not there is some mechanical obstruction which prevents descent.

3. Even though glandular therapy may be ineffective in causing descent of the testis, it facilitates orchiopexy by enlarging the parts involved.

In our experience, most of the reports on glandular therapy in this condition are overenthusiastic. They show descent on the average in about 60 per cent of the cases, whereas our own data show descent in only about one fourth of the cases in boys under 16 years of age. The main reason for the discrepancy would appear to be failure on the part of many investigators to distinguish between true cryptorchism and pseudocryptorchism (migratory testes). In order to determine the true location of the testes, the patient must be examined in the upright position on at least two separate occasions. A migratory testis may sometimes retract into the abdominal cavity.

Chorionic gonadotropin and testosterone propionate are both effective in the treatment of this condition. Indeed, chorionic gonadotropin produces its effect by stimulating the testes to produce male sex hormone. Stimulation therapy is preferable whenever the testes can respond, because testosterone propionate temporarily damages the normal testis. It is indicated only when both testes are in the abdominal cavity and incapable of responding to stimulation. Even in bilateral intra-abdominal cryptorchism, definite stimulation of male sex hormone production may be produced by chorionic gonadotropin. It should therefore be used in all cases before resorting to substitution therapy.

The effective dose varies from patient to patient, but 500 international units three times a week is usually adequate. The treatment is continued until the testis descends or until it is obvious that surgical procedures are necessary. As a rule, when glandular therapy is effective the testis descends within two months, although it is sometimes necessary to continue the treatment for as long as six months. It is continued until the testis descends or until a moderate amount of genital growth is induced, without descent. Patients must be examined frequently in order to avoid excessive genital growth.[14] If moderate growth occurs without descent, operative procedures should be resorted to immediately. If any delay ensues, the genitalia decrease in size and the operation becomes more difficult.

Chorionic gonadotropin may be effective in inducing descent as late as the age of 32 years, and descent has been noted with male sex hormone as late as the age of 60 years.

Hypogonadism Secondary to Hypopituitarism.—Hypogonadism is observed in chromophobe adenoma of the pituitary, Simmonds' disease and the Fröhlich syndrome, which is rarely associated with pituitary tumor. In extreme forms of hypopituitarism such as those seen in Simmonds' disease and in a few patients with chromophobe adenomas, there are other deficiencies besides hypogonadism which require treatment, notably hypothyroidism and hypoadrenalism. The effective dose of chorionic gonadotropin varies from 500 to 1,000 international units three times a week. The criteria for the diagnosis of the Fröhlich syndrome are not clearly worked out. There is a group of young boys with excessive obesity and hypogonadism who do not undergo adequate sexual maturity. They are characterized by very small genitalia, fulness of the breasts, large pendulous abdomen with a transverse fold just above the pubic area, broad hips, large thighs, narrow shoulders and genu valgum. The basal metabolism is often depressed to a level of minus 20 to minus 25 per cent. The sella turcica is usually normal in size or somewhat small. They are usually normal in height or even slightly taller than the average, although the condition may be associated with dwarfism. Some individuals of this type show a remarkable change at the age of puberty and undergo a complete transformation without treatment. It is impossible at present to be certain in what patients spontaneous improvement will take place. The same type of change may be induced at an earlier age by the administration of chorionic gonadotropin. The obesity usually disappears and the body contour is completely altered. Adequate diagnostic criteria will be awaited with great interest. At present it is probably desirable to treat the more extreme forms of this condition because in such patients complete restoration to normal may not occur without treatment. Chorionic gonadotropin should be given in a dose of 500 international units three times a week, starting at the age of 11 or 12 years. The treatment should be continued until epiphysial closure takes place. No harmful effects have been observed when the treatment has been carried out in this manner. When treatment is not started until after the age of normal puberty, it is not as effective and the skeletal contour cannot be changed appreciably. However, striking stimulation of testicular function has been observed as late as the age of 37 years, using a dose of 1,000 international units of chorionic gonadotropin three times a week.

INDICATIONS FOR SUBSTITUTION THERAPY (TESTOSTERONE PROPIONATE)

Treatment with male sex hormone is indicated in all cases of hypogonadism in which the testes cannot respond to stimulation,[15] namely:

1. Primary hypogonadism, including:
   (*a*) All cases of eunuchism.
   (*b*) Most cases of eunuchoidism.
2. Secondary hypogonadism, when stimulation is ineffective. This applies to a few cases of the Fröhlich syndrome, chromophobe adenoma of the pituitary and pituitary dwarfism. However, stimulation therapy is effective and preferable in most of them.
3. Impotence from deficiency of the testes.
4. Male climacteric (?).

Treatment of Eunuchism and Eunuchoidism.—Three methods of treatment are employed:

1. Parenteral administration of testosterone propionate in a dose of 25 to 50 mg. three times a week.
2. Oral administration of methyl testosterone, 30 to 90 mg. daily.
3. Implantation of pellets of testosterone (total of about 1,000 mg.).

In order to induce maximum changes, it is usually necessary to use testosterone parenterally, although methyl testosterone may prove to be satisfactory for

14. Thompson, W. O., and Heckel, N. J.: Precocious Sexual Development from an Anterior Pituitary-like Principle, J. A. M. A. **110**: 1813 (May 28) 1938.

15. Thompson, W. O., and Heckel, N. J.: Male Sex Hormone: Clinical Application, J. A. M. A. **113**: 2124 (Dec. 9) 1939.

maintenance therapy once these changes are induced. Since methyl testosterone is effective orally, the implantation of pellets is rarely resorted to. Large doses are continued until maximum effects are produced. This usually takes from one to two years. Regression is then prevented by administration of a smaller maintenance dose for the rest of the patient's life.

Eunuchoidism is commonly but not necessarily associated with bilateral intra-abdominal cryptorchism. The testes may be in the scrotum but are atrophic and secrete very little male sex hormone. When the condition is extreme, it is characterized by infantile genitalia, lack of muscular development, high pitched voice, lack of hair on the body and face and skeletal disproportions, with a short trunk and long extremities. The shoulders are usually narrow and the hips slightly broad. Epiphysial union is usually delayed. Patients suffering from this condition often attain normal height or may be slightly taller than the average. Obesity of the girdle type may be present, with some fulness of the breasts, although the majority of eunuchoid individuals are not overweight. When testicular function is lost after normal sexual function has occurred, the changes are much less striking. There is some atrophy of the genitalia, some loss of body hair and a slight change in the pitch of the voice. Obesity may or may not be present. Ease of fatigue is very common and various psychic and neurologic disturbances are noted, including depression, lack of confidence, inability to perform sustained mental work and hot flashes.

In eunuchs and eunuchoid men who are completely undeveloped sexually, the administration of adequate doses of testosterone propionate will produce the following changes:

1. The appearance of the secondary sex characteristics of the normal adult male. These include development of the penis, scrotum, seminal vesicles and prostate, development of the musculature, lowering of the pitch of the voice, growth of hair in the pubic and axillary regions, on the face, abdomen, chest, arms and legs, and the onset of erections and seminal emissions.

2. Increase in appetite, weight and strength. During the administration of from 25 to 50 mg. three times a week, such individuals usually gain from 25 to 40 pounds (11 to 18 Kg.) in the course of about four months. They do not become obese. The increased weight is well distributed and is explained in part by the development of the musculature of the body, which takes on masculine characteristics in contrast to the undeveloped feminine type of musculature seen in the eunuchoid state. It should be pointed out that the male sex hormone causes retention of nitrogen, water, sodium and chloride.

3. An increase in vigor and sense of well being. Patients no longer fatigue easily. They become capable of much more mental and physical work.

4. The development of normal emotional reactions. Patients lose their feminine characteristics. Their shyness disappears. They become more aggressive and no longer run away from arguments and physical combat. One patient recently wished to discontinue treatment because he was worried about becoming so unconcerned about the thoughts and actions of other people. Some behavior effects in animals are of interest. The administration of male sex hormone makes female canaries sing like males, it makes hens crow, and chickens receiving it assume dominance over the others.

5. An increase in basal metabolism of as much as 30 points. The increase may be as great as 60 points with methyl testosterone.

The changes in such patients are very striking and represent one of the miracles of modern medicine. In order to prevent skeletal disproportions, it is necessary to begin treatment at the age of 10 to 12 years.

Impotence.—It is important to bear in mind that impotence is a symptom, not a disease. It is most commonly neurogenic in origin, but it may be associated with a deficient production of the male sex hormone and with various organic diseases and may be related to the local condition of the genitalia as, for example, inflammatory processes. When it is the result of a definite glandular deficiency, it can be treated effectively with testosterone propionate in a dose of 25 mg. three times a week. Since it is not always possible to determine whether or not the condition is glandular in origin, it is sometimes necessary to carry out a therapeutic test for two or three weeks. If improvement occurs, it may be assumed that a definite deficiency of male sex hormone was present. Glandular therapy is without effect when the condition is neurogenic in origin.

The Male Climacteric.—There is no definite epoch in the male like the menopause in the female, but there does occur a gradual reduction in the amount of sex hormone produced with advancing years. This change is sometimes so pronounced that definite symptoms of deficiency are produced which resemble those of the menopause in the female. They include vasomotor disturbances with hot flashes, sweating, chills and paresthesias. Various emotional disturbances are noted, including nervousness, irritability, fatigue and depression. Potency is greatly reduced, and there develops a lack of interest in social and business life and a decrease in mental concentration and energy. Great care must be taken to exclude organic disease. Most tired old men are not suffering from the male climacteric. When the condition exists, great improvement may follow the administration of 25 mg. of testosterone propionate three times a week.

INFLUENCE ON GROWTH

One of the most interesting and important recent developments is the demonstration of the influence of testosterone propionate on the growth of young boys.[16] Chorionic gonadotropin produces the same effect by stimulating the testes to produce male sex hormone. The administration of these materials will cause young boys to grow at three to four times the normal rate. They influence not only the growth of bone but that of the musculature and of every tissue in the body. This means that the male sex hormone is a general growth stimulus influencing the growth and function of all tissues. It will cause the bones of young boys to age at three to four times the normal rate and induce premature closure of the epiphyses. It does not appear to affect the final height, because the rapid aging of bone is counterbalanced by the rapid increase in height. The increase in the rate of growth is self limited, and it is impossible to produce gigantism with this material. As there is no preparation of the pituitary growth factor whch is effective clinically, the administration of male sex hormone is of value in the treatment of pituitary dwarfism. While it produces a

16. Thompson, W. O.; Heckel, N. J., and Morris, R. P.: Endocrine Regulation of Growth, J. Clin. Endocrinol., to be published.

considerable amount of growth in this condition, it does not result in normal height of the skeleton. The male sex hormone cannot be substituted for the thyroid hormone or the pituitary hormone in skeletal development. The presence of the thyroid and pituitary growth factors is necessary for the skeleton to achieve normal height, and they appear to be involved primarily with growth of the skeleton in length. Sex hormones seem to be concerned principally with skeletal molding. The acceleration of growth during the administration of this material to young boys is similar to the acceleration observed without treatment during normal puberty.

MISCELLANEOUS

The use of male sex hormone has been suggested in the following conditions:

1. Benign prostatic hypertrophy.
2. Homosexuality.
3. Functional uterine bleeding.
4. Dysmenorrhea.
5. After-pains.
6. Suppression of lactation.
7. Engorgement of the breasts.
8. Menopausal syndrome.

Its value in most of these conditions is open to question. Heckel [17] was unable to observe any improvement in prostatic hypertrophy during its administration. Since the development of the prostate is dependent on the presence of male sex hormone, it is difficult to see why this material would cause a decrease in size in later life. The androgen/estrogen ratio in the urine is said to be abnormally low in certain male homosexuals, but the glandular treatment of this condition is very disappointing. While it may be of some value in functional uterine bleeding, it is very doubtful whether male sex hormone should be used in the female because, even in moderate doses, it may cause hirsutism and lowering of the pitch of the voice.

HARMFUL EFFECTS OF MALE SEX HORMONE

Among the harmful effects of the administration of male sex hormone may be listed:

1. Injury to the normal testis, with production of azoospermia.[18] Recovery from such injury may follow the omission of treatment.
2. Symptoms of heart failure in old men with arteriosclerosis or hypertensive heart disease.
3. Pitting edema of the lower legs.
4. Acne vulgaris.
5. Hypertrichosis in women.
6. Hypermetabolism, the mechanism of which is unknown.

Acne Vulgaris.—One of the most interesting side effects of the administration of male sex hormone is the production of acne. The development of acne is observed very commonly during the administration of male sex hormone and chorionic gonadotropin to young boys. It is also often noted in the treatment of older eunuchoid men with testosterone propionate. It appears spontaneously in some boys and girls at the time of puberty in conjunction with an increase in the output of androgenic material in the urine. There would thus appear to be some relationship between androgens and the production of acne, although the problem is a complex one. The titer of androgens is low in some patients with acne, and in some young men and young women the condition is improved by the administration of chorionic gonadotropin. The development of acne is undoubtedly influenced by some condition inherent in the skin itself.

STERILITY

The treatment of sterility is unsatisfactory because of the absence of gonadotropins that influence spermatogenesis. In some animals small doses of testosterone propionate will maintain spermatogenesis after hypophysectomy, but in man this material appears to depress the spermatogenic function of the normal testis, even to the point of azoospermia.[18] The administration of male sex hormone therefore plays no role in the treatment of sterility.

CANCER OF THE PROSTATE

Huggins and Hodges [19] have observed that after castration the signs and symptoms of cancer of the prostate are greatly alleviated in some patients. Roentgen ray evidence of metastases in bone may disappear. The same changes may be induced by functional castration with diethylstilbestrol,[20] which damages the testes. Sufficient time has not yet elapsed to say precisely what the effect of treatment is, but the longer the patients are followed, the less convincing becomes the evidence of a complete cure. The condition often recurs, and many of the patients die eventually of cancer of the prostate. For this reason Kretschmer [21] has questioned the value of castration in this condition. Heckel [22] has suggested that treatment with diethylstilbestrol (5 mg. daily) may be more effective than surgical castration because it inhibits the gonadotropic activity of the anterior lobe of the pituitary. After castration this function is increased and may result in stimulation of the adrenal cortex to produce androgenic material. The observations are very interesting because they furnish the first clearcut evidence in man of the influence of a hormone on the growth of cancer.

700 North Michigan Avenue.

17. Heckel, N. J.: The Influence of Testosterone Propionate on Benign Prostatic Hypertrophy and Spermatogenesis: A Clinical and Pathological Study in the Human, J. Urol. **43**: 286, 1940.
18. Heckel, N. J.: Production of Oligospermia in a Man by the Use of Testosterone Propionate, Proc. Soc. Exper. Biol. & Med. **40**: 658, 1939.
19. Huggins, C.: Endocrine Control of Prostatic Cancer, Science **97**: 541, 1943.
20. Nesbit, R. M., and Cummings, R. H.: Prostatic Carcinoma Treated by Orchiectomy, J. A. M. A. **124**: 80 (Jan. 8) 1944.
21. Kretschmer, H. L.: Orchiectomy in the Treatment of Cancer of the Prostate Gland, J. A. M. A. **123**: 755 (Nov. 20) 1943.
22. Heckel, N. J.: The Endocrine Therapy of Carcinoma of the Prostate, Proc. Interstate Postgrad. M. A. North America, to be published.

Medicine of the Middle Ages (201-1514).—The thirteen hundred years between the death of Galen and the birth of Vesalius cannot be accredited with any major contribution to the understanding of the basic nature of disease. This was a period, nevertheless, during which the groundwork for the renaissance in medicine was laid. The middle ages was a period of rigid scholasticism in medicine, as it was in all phases of social and cultural development. It was a period in which authority held sway and the influence of tradition was dominant. Since this was a time in which the western world suffered great upheavals and great depressions, with much limitation of intellectual activity, it was necessary for medicine to find other soil in which to develop. Thus it came about that the Arabs were provided with an opportunity to contribute toward the development of medical thought.—Forbus, Wiley D.: Reaction to Injury, Baltimore, Williams and Wilkins Company, 1943.

CONVALESCENT SERUM AGAINST MEASLES

NIELS DUNGAL, M.D.
NEW YORK

Since Degkwitz [1] published his first report on the prophylactic value of convalescent serum against measles, this method of prophylaxis has been used more or less in every epidemic in Iceland. Owing to the isolation of the country, many years may elapse between two epidemics of measles. In the last century over twenty years could pass between epidemics, and when the disease at last was brought in it swept like a fire, attacking people of all ages and killing great numbers of them, behaving on the whole like a dangerous disease. In 1846 it killed 2,000 people, or 35 per thousand of the entire population. In 1882 the mortality rate was 24 per thousand of the whole population. Such enormous mortality rates are no longer seen, and the intervals between epidemics have grown shorter, now usually being about seven years. The disease, on the whole, runs a much milder course, just as it has in the United States and on the European continent. It usually spreads all over the country in six to twelve months and then dies out completely until the next time it is imported.

The last epidemic started in May 1943 in Reykjavik and passed all over the country during the summer. Owing to the shortage of labor, persons who had not had measles before were anxious to avoid the disease during the period in which their services were badly needed, and each day of sickness meant a considerable loss of income. This added greatly to the normal demand for protecting children, particularly those whose resistance had been lowered by tuberculosis. As there was therefore reason to expect a considerably increased demand for convalescent serum, we encouraged people through press and radio to volunteer for donorship as soon as a week had passed since their fever had dropped to normal but not before fourteen days had passed since they fell ill.

POOLING OF SERUM

As we had a considerable number of adult patients, we did not bleed anybody under 16 years of age. The higher age limit was set at 50. We took 400 to 500 cc. from each person who was considered suitable. A total of about 90 liters of blood was taken in the course of a month from convalescent patients, and from this we obtained about 30 liters of serum, all of which was passed through Seitz filters for safety's sake, although every precaution was taken to preserve sterility during bleeding and pooling of serum. None of the donors complained of any harmful effects of the bleedings.

DOSAGE

The serum was issued in ampules of 5 cc. and rubber-covered glass bottles of 20 cc. We recommended 1 cc. of serum per year of age, but never less than 2 cc. and up to 20 cc. for adults. In Reykjavik the serum was administered by general practitioners, but in Akureyri this was done by the chief officer of public health, who kept careful records of all his injections and was therefore able to furnish us with reliable material for this report. In Reykjavik we could collect information only by questioning the mothers of injected children aided by a report on 20 children from one of the doctors.

RESULTS

We have been able to collect reports on 203 persons who received serum. Of these 112 were in Akureyri and 91 in Reykjavik. Of this number 61, or 30 per cent, contracted measles and 139, or 70 per cent, remained symptomless.

The percentages were practically the same in Akureyri and Reykjavik.

Further details of the 61 who contracted measles were obtained from 45 persons. Of these 45, 16 were affected within ten days after the injection, 15 were affected between ten and thirty days, 3 were affected between the thirtieth and the fiftieth day, and 11 were affected after fifty days had passed from the injection.

Those who fell sick within ten days after injection must all have been infected at the time of injection. Several fell sick on the day following the administration of serum, which evidently had not been able to prevent the outbreak of the disease. Assuming that serum may effectively prevent measles only if given during the first five days of the incubation period, one may expect that those who fell ill during the first ten days after the injection had been infected fifteen days or more previously, i. e. the disease had become so firmly rooted that its course could not be expected to be halted.

But although the progress of the disease may not be prevented, its outbreak may be delayed when serum is given during the incubation period. An illustrative example of this we saw in a man aged 30 who came to our institute to be injected with serum because he was leaving town for a distant place to which he did not wish to carry the measles. He had been in contact with a patient in the catarrhal stage, one of the first few in Reykjavik, who had broken out with a typical rash on the day following this contact. When the man came to us, five days had passed since the contact had taken place. We gave him 20 cc. of serum and told him to return before he left town. On the ninth day after the injection (the fourteenth after exposure) he came to us symptom free, but in a letter we received from him later he stated that he had had a slight rash fourteen days after the injection (nineteen days after the infection) and had been in bed two days with a slight fever and a typical rash, which vanished in the course of two days.

It must therefore be assumed that a considerable proportion of persons who fell sick ten to thirty days after injection were infected at the time of injection, and that the incubation period was prolonged considerably through the administration of serum, as will be mentioned later.

On the other hand, those patients who did not fall sick until fifty days or more had passed from the injection form a different group. At that time most of the passively conferred immunity will have disappeared and the resistance will have been brought down to its original level. If a person falls sick on the fiftieth day (and strikingly many fell sick on the fiftieth to the fifty-fourth day), they must be assumed to have been exposed to infection fourteen days before, which sug-

From the Department of Pathology and Bacteriology, University of Iceland, Reykjavik.

1. Degkwitz, R.: Deutsche med. Wchnschr. **48**: 26, 1922.

gests a protection of at least thirty-six days, or well over a month, as may be expected with homologous serum.

There are remarkably few persons who are affected between the thirtieth and the fiftieth day, and in this series those who were all fell sick on the thirtieth and the thirty-first day; no one in the entire group fell sick between the thirty-second and the fiftieth day.

TABLE 1.—*Results with Relation to Age*

Age, Years	Symptom Free	Measles
0- 1	14	0
1- 2	25	3
2- 3	17	4
3- 4	18	2
4- 5	6	2
5- 6	7	1
6- 7	5	2
7- 8	3	1
8-12	1	4
12-20	8	5
20 and older	17	15
	121	39

Of the 3 children who fell sick on the thirtieth and the thirty-first day these details were noted: 1. A child aged 1 year was inoculated with 5 cc. on April 30 and fell sick on May 31; it was only slightly ill. It had been exposed to infection three days before the injection of serum. 2. A child aged 1 year got 1 cc. of serum on July 5 but fell sick on August 6. In this case the dose was smaller than we recommended, 1 cc. instead of the recommended not less than 2 cc. 3. A child aged 4 years received 5 cc. on June 19 and fell sick on July 20; the disease was very mild, and no fever preceded the rash.

Those who fell sick thirty to thirty-two days after the injection of serum must be supposed to have been infected not less than fourteen days before, and probably still earlier, as one must expect a prolongation of the incubation period by the serum. Actually it is more likely that the contact took place fourteen to twenty-one days before, or seven to fourteen days after the injection of serum. One is then faced with the questions whether it is more probable that the infectious agent has broken through the passive resistance supposed to be conveyed with the serum or whether the children have been infected at the time of injection and the incubation period prolonged up to a month or more. As we do not know the potency of the serum, it is possible that one or more donors have yielded serum only slightly potent. Yet this is not likely to have had noticeable influence when at least 10 serums from different persons were pooled, as was our custom.

When, on the other hand, it is considered that nobody fell sick between the thirty-second and the fiftieth day, we are inclined to suppose that the incubation period may be prolonged up to thirty-five days, as in the case of the child who was exposed three days before injection.

If those who fell sick about the thirtieth day were infected after injection, they must, as already mentioned, have contracted the infectious agent some time during the first fourteen days after injection of the serum. When one compares the obvious efficacy of the serum during the period from thirty-two to fifty days, which suggests full resistance eighteen to thirty-six days after injection, it can hardly be assumed that the resistance to contagion is less during the first two weeks after injection than after four weeks have passed.

RESULTS WITH RELATION TO AGE

Table 1 shows the effect of serum in different age groups. It indicates that adults and children of the older age groups were more susceptible to measles in spite of the serum than the younger children. In order to protect the older age groups completely, they should probably receive bigger doses of serum. But the advantage is doubtful, as will be discussed later.

COURSE OF DISEASE IN SERUM-INJECTED PATIENTS

There was unanimous consent among physicians and the public that serum-injected persons who contracted the disease had it in much milder form than those who did not receive any serum. Many were only slightly sick for two or three days, and a considerable number were not apparently sick until they noticed the rash. In Reykjavik we made a comparison between 17 children who fell sick after they were given serum and 49 who got no serum (table 2).

In unprotected children pneumonia was noticed in 5 and purulent otitis media in 1. A seventh child got chronic otitis and conjunctivitis. In the protected children no complications were noted.

HAS THE SERUM THERAPEUTIC VALUE?

But little is known about the possible therapeutic value of measles convalescent serum. The Council on Pharmacy and Chemistry [2] considers the therapeutic value of measles serum doubtful but states that owing to lack of experience no well founded opinion can be uttered at present.

We too have had little experience to add in this field, but seeing the striking prophylactic effect of serum we expected it to be of some value therapeutically if larger doses were given. We therefore encouraged our colleagues to try the serum therapeutically in the later phase of the epidemic, when we had serum available, but we got no report on administration after a rash had developed. But many doctors who did not give serum until late in the incubation period and even not before the patient was well in the catarrhal stage were convinced of the beneficial effects of the serum, to which they attributed the mild course of the measles in these cases.

TABLE 2.—*Comparison of Results for Treated and for Untreated Children*

Patients	Fever, Average Number of Days	Highest Temperature Average
Serum injected	3.6	102.5 F.
No serum	8.5	104 F.

In a small public school some children were injected in the catarrhal stage, and the school physician informed us that the effect was unmistakable, there being no

2. Human Convalescent Measles Serum and Human Convalescent Scarlet Fever Serum, report of the Council on Pharmacy and Chemistry, J. A. M. A. **121**: 49 (Jan. 2) 1943.

comparison between mildness of the attack in the inoculated children as compared with the severity in those who got no serum.

In 1 case we tried serum therapeutically.

A boy aged 3 years who had got no serum was taken suddenly ill at night and had high fever the following morning. His face was distinctly swollen and the unusually agile boy was quite prostrated. No rash was visible, but typical Koplik's spots were found in his mouth. As the disease was found to start severely we gave him at once 40 cc. serum subcutaneously. The boy complained and whimpered all day long on account of the intumescence caused by the serum on his abdomen and during the following night he was very ill, with a fever of 40 C. (104 F.). But on the following morning his temperature was normal (twenty-four hours after the injection of serum), and his parents would not believe that this had been measles, as no rash appeared and the boy seemed to be in perfect health again. They were told that a rash would probably soon appear, and four days later the boy got an unusually great rash, accompanied by slight fever for two days. Yet he was so well that it was difficult to keep him in bed. The boy's sister fell sick a little later without having been given serum. Her disease began with milder symptoms, yet she had fever for a week and her recovery lasted much longer.

CONCLUSIONS

Convalescent serum is useful in two ways against measles: On the one hand, it may be applied to effect a complete protection against the disease, and, on the other, it may be used to alter the course of the disease in the following manner: prolongation of incubation period, milder symptoms, lower fever, shorter illness, less complications and a corresponding quicker recovery. Some people want their children to contract measles, as it is usually more desirable to have the disease in childhood than to have to expect it some time later in life, when time is more precious. In order to effect a milder course of the disease the normal procedure should be to bring the child into contact with an infectious patient and give serum six to eight days later. If an adequate dose is given, the child will in all probability get a slight attack of measles yet sufficient to confer a lifelong immunity.

In some cases complete protection will always be indicated, particularly for patients suffering from tuberculosis or other diseases where an addition of measles must be considered as a dangerous complication.

A therapeutic use of convalescent serum may come into consideration, particularly during the first days of illness, when the disease has an alarming start, especially in patients with weakened resistance.

SUMMARY

In an epidemic of measles in Iceland in 1942, 203 persons were given convalescent serum. Of these 139, or 70 per cent, remained symptom free. Most of the others got the disease in a considerably milder degree than those not protected. The duration of the protection afforded by serum may last as long as thirty-six days at least. There are indications which suggest that the incubation period may be prolonged up to thirty-five days through injection of serum.

Serum may be of value if injected late in the incubation period and even in the catarrhal stage. A case was observed in which the serum appeared to be of therapeutic value.

2 East 86th Street.

PENICILLIN THERAPY OF GONORRHEA IN MEN

CHARLES FERGUSON, M.D.
Senior Surgeon (R), U. S. Public Health Service
AND
MAURICE BUCHHOLTZ, M.D.
Acting Assistant Surgeon, U. S. Public Health Service
STATEN ISLAND, N. Y.

Penicillin inhibits the growth of bacteria; some authorities maintain that it is an extremely powerful bactericidal agent also. It is nontoxic in various amounts necessary for therapeutic purposes.

This report is a continuation and combination of two previous preliminary reports published by Drs. Mahoney, Van Slyke and Arnold at the U. S. Marine Hospital, Staten Island, N. Y. This report is not made to establish the efficacy of penicillin in the treatment of gonorrhea but to try to determine the proper and minimal dosage to obtain the necessary cure.

Numerous articles have appeared on treatment with penicillin. In the first one, by Herrell, Cook and Thompson,[1] 5 cases were reported in which the continuous intravenous drip method was employed with favorable results. In the second and third articles, by Dr. Mahoney and his associates[2] and by Van Slyke, Arnold and Buchholtz,[3] the intramuscular route was employed. The results will be correlated and included in the present series of cases.

Details of Treatment

Group	Number Treated	Number Cured	Number Failed	Number of Doses	Units per Dose	Total Dosage
A	75	74	1	16	10,000	160,0.0
B	23	23	0	5	20,0.0	100.0.0
C	25	21	4	4	25,000	100 0 0
D	25	24	1	5	15,0.0	75,000
E	21	16	5	5	10,0 0	50,0 0
F	32	32	0	6	20,000	12?,000
G	24	23	1	6	18,750	112,500
H	16	16	0	6	16,666	100 000
I	387	377	10	6	20,0 0 (1st and 6th 20,000; 4 of 10,000)	80,000
J	39	38	1	6	10,833	65.000
K	86	80	6	6	10,000	60,000

The patients included in this report were all young, healthy men of the Merchant Marine and enlisted personnel of the Coast Guard, their chief disability being gonorrheal urethritis. All had failed previously to obtain a cure following some form of sulfonamide therapy, the amounts varying anywhere from 20 to 500 Gm. during the course of treatment. The diagnosis was based on positive spread and confirmed by positive culture for gonococci.

Penicillin may be administered by repeated intravenous injections, by continuous intravenous drip, or by the intramuscular route. When administered by intramuscular injection it is usually given in a concentration of 5,000 units or more per cubic centimeter, injections being made at short intervals (one to three hours). Freshly prepared solutions of penicillin are preferred.

From the U. S. Marine Hospital, medical director, William Y. Hollingsworth, medical officer in charge.

1. Herrell, W. E.; Cook, E. N., and Thompson, L.: Use of Penicillin in Sulfonamide-Resistant Gonorrheal Infections, J. A. M. A. **122**: 289 (May 29) 1943.

2. Mahoney, J. F.; Ferguson, C.; Buchholtz, M., and Van Slyke, C.: The Use of Penicillin Sodium in the Treatment of Sulfonamide-Resistant Gonorrhea in Men, Am. J. Syph., Gonor. & Ven. Dis. **27**: 525 (Sept.) 1943.

3. Van Slyke, C. J.; Arnold, R. C., and Buchholtz, M.: Penicillin Therapy in Sulfonamide-Resistant Gonorrhea in Men, Am. J. Pub. Health **33**: 1392 (Dec.) 1943.

Our initial trial was by the intravenous route on patients with gonorrhea resistant to the sulfonamides. Five patients, each receiving a total of 125,000 units of penicillin, were treated. This amount was divided into five injections of 25,000 units dissolved in 10 cc. of fresh sterile distilled water given every four hours. The result was three cures and two failures. We did not consider this result to be satisfactory. We found that the penicillin is too rapidly excreted when given by vein.

It was then decided to use the intramuscular route. The result of this method was given in a report by Dr. Van Slyke [2] and the Venereal Disease Research Laboratory in a series of 75 cases studied. A total dosage of 160,000 units intramuscularly was given over a treatment period of forty-five hours. The dosage consisted of 10,000 units every three hours of sixteen injections (day and night). Seventy-four patients responded satisfactorily; 1 was a therapeutic failure. No serious toxic reaction of any kind occurred.

A reduction in the dose-time ratio was then used. The result of this method will be seen in the accompanying table.

The sum total of cases treated with the various dosages, as shown in the table, was 753, of which 29 were failures, a percentage of 4.

The following groups are essential for discussion. Group A: Of 75 patients treated, 74 were cured and there was 1 failure. The result is good, but the period of treatment was too long, and too many injections were required (one every three hours, day and night, for two days). In group B there were 23 patients cured out of 23 treated. Group F showed the same result; out of 32 patients treated there were 32 cured. The latter was an excellent group with satisfactory dosage and a sufficient number of doses. Group H showed a good result, with 16 patients treated and 16 cures obtained. In group I 387 patients were treated and 377 responded satisfactorily. This group of patients received 20,000 units of penicillin as the initial dose and also as the last and sixth dose. The dosage in between consisted of 10,000 units for four injections. When the medication is limited and the number of patients is large, this appears to be the most satisfactory method of treatment at the present time.

It appears that the time factor has been satisfactorily established as a three hour interval between doses. The number of doses necessary for results is five to six injections at least. The intramuscular route is the most satisfactory because it is simple, easy to give, and absorption is slower than with the intravenous route. As regards toxicity, there was no evidence of any immediate or delayed reaction noticeable from the drug. The strains of gonococcus are very sensitive to penicillin. There is no difference with regard to response between untreated patients and those who previously failed to respond to sulfonamides.

COMMENT

The clinical study based on 753 patients treated with penicillin indicates that the strains of gonococci are very sensitive to this drug. Groups B, F and H showed no failures. This appears to indicate that a total of 100,000 units or more is necessary to produce a cure. It also indicates that five to six injections are necessary. In group I the total dosage of only 80,000 units was due to limitation of the drug. The results are excellent in that of 387 patients treated 377 were cured, with 10 failures, the result showing only 3 per cent failures.

The patients treated unsuccessfully were eventually cured as follows: Four were treated with a combination of chemotherapy plus fever therapy [4] (i. e. 6 Gm. of sulfathiazole followed by fever therapy, with a temperature of 106 F. for six hours). The sulfathiazole was given in doses of 1.0 Gm. every four hours for six doses, and then within two hours fever therapy was employed. Five patients responded after a second course of penicillin, in accordance with group F. One patient required a third course of penicillin, a total of 175,000 units divided into 25,000 units given every three hours intramuscularly for seven injections.

The dosage necessary to produce a cure is 20,000 units per dose for six injections, making a total of 120,000 units. This has been shown in 42 cases with no failures.

The next best group is group I, in which 381 patients were treated as follows: 20,000 units for the first dose, then 10,000 units for the next four doses and finally 20,000 units for the sixth and last dose a total of 80,000 units. The result showed 377 cures and 10 failures, a little over 2 per cent of failures.

As regards toxicity, there was no evidence of any immediate or delayed reaction noticeable from the drug.

TREATMENT OF ASIATIC CHOLERA WITH SULFAGUANIDINE

CLINICAL STUDY OF TWENTY-TWO CASES

JOO-SE HUANG, M.B.
KWEILIN, KWANGSI, CHINA

After obtaining a favorable result in a number of cases of bacillary dysentery by the administration of sulfaguanidine, I undertook experiments on its efficacy in other acute infections in which the intestinal tract is involved by bacilli.

The unexpected prevalence of Asiatic cholera in Kweilin last summer gave me an opportunity to study another kind of acute infection for which no effectual remedy had previously been found.

I was surprised to find sulfaguanidine efficacious in the first case of Asiatic cholera in which I administered it. At the same time I doubted whether my observation could be sufficiently adequate. After several experiments, however, I had to concede that sulfaguanidine could give an unexpected efficacy in Asiatic cholera and that an effective remedy had been found whereby our bitter enemy cholera, which had been killing a great many people in the world for many years, could eventually be subdued.

Twenty-two patients with Asiatic cholera who had been treated with sulfaguanidine were observed. Most of them were laborers. Their ages ranged as follows: 10-20, 2; 20-30, 8; 30-40, 10; 40-50, 1; 50-60, 0; 60-70, 1.

METHOD OF ADMINISTRATION

In 19 adults, 3 Gm. was given as a first dose and 1 Gm. every two hours for six times; then 1 Gm. every four hours for one to two days. One patient was a boy aged 11 years. The first dose was 2 Gm., and the maintaining doses were 0.75 Gm. Another patient, a girl aged 6 years, was given 1.5 Gm. as a first dose and 0.5 Gm. as maintaining dose.

---

4. Ferguson, C.; Buchholtz, M., and Gersten, S.: Single Combined Treatment for Gonorrhea, Am. J. M. Sc. **204**: 685 (Nov.) 1942.

From the Department of Medicine, Kwangsi Provincial Medical College.

The patients were ordered to drink as much water as possible, and circulatory stimulants, such as camphor water and tincture of digitalis, were repeatedly given either by subcutaneous injection or by mouth. But no other drugs were given during the whole treatment.

The hours for beginning to receive treatment of sulfaguanidine varied greatly: four hours after onset, 1 case; eight hours, 10 cases; twelve hours, 5 cases; eighteen hours, 4 cases; twenty-four hours, 2 cases.

CLINICAL OBSERVATIONS

All these cases showed typical symptoms of cholera: vomiting, severe rice water stool, muscular cramps and diminution both in amount and in frequency of urine, even anuria. Some patients were in the stage of collapse, but the severity of dehydration varied.

Three to four hours after taking the drug, the patients improved: frequency of vomiting and diarrhea diminished gradually, the voice returned and the muscular pains disappeared, although the epigastric discomfort still remained.

Three to four hours later, vomiting and diarrhea almost ceased, cyanosis gave way to a bright color of the skin and mucous membrane, and the secretion of urine commenced or increased. The patients began to improve generally. Thereafter, diarrhea not only subsided but the patients' bowels tended to become constipated.

Eight hours after treatment the cultures of cholera vibrio in the stool were negative.

As this treatment tends to decrease vomiting and diarrhea in a few hours, a continuous and overabundant loss of fluid from the tissues is thereby prevented, thus avoiding the danger of severe dehydration, and fluid taken by mouth helps to restore a part of the loss.

At first I was afraid that the tablets of sulfaguanidine would be expelled by vomiting. But this occurred in only 3 cases, in the first or even the second dose.

Of the 22 patients, 21 were cured in a short time and 1 died within seventy-three hours of being ill. The mortality rate of Asiatic cholera ranged from 20 to 60 per cent in various clinics, but under this treatment even without the injection of salt solution the death rate was remarkably reduced. On the other hand, of patients treated with earlier methods—injection of hypertonic salt solution, administration of kaolin, potassium permanganate and so on, the death rate is still as high as 26 per cent (according to the report of the Provincial Hospital of Kweilin in 1943). I fancy that the combined application of sulfaguanidine and salt solution injection will reduce the mortality to less than 5 per cent.

SUMMARY

1. Twenty-two patients with Asiatic cholera treated with sulfaguanidine were observed. Only one patient died.

2. From three to four hours after the beginning of this treatment the patients showed general improvement.

No. 1, Chuang-shan.

Ideals of Humanity.—But now and always medical men recognize that above all ideals of merely national patriotism and prestige are the ideals of humanity. And so we find medical men laboring to save life and to ease suffering whether among friends or foes, thus giving practical expression to the ideal that "above all nations is humanity."—Conklin, Edwin G.: "The Doctor's Dilemma" of Medical Ethics in Peace and War, *Science* **99**:187 (March 10) 1944.

THIOURACIL

ITS USE IN THE PREOPERATIVE MANAGEMENT OF SEVERE HYPERTHYROIDISM PRELIMINARY REPORT

ELMER C. BARTELS, M.D.
BOSTON

Since Plummer [1] in 1923 introduced Lugol's solution for the treatment of exophthalmic goiter, iodine has been a routine agent in the preoperative management of these patients. However, in spite of its proper use there still remains a group of cases in which there is serious surgical risk. These patients are very toxic, having had the disease a long time. A large thyroid gland and a high basal metabolic rate usually are present. Widespread visceral strain is evident, as shown by great weight loss and at times cardiac complications. Preoperative improvement of these patients beyond the state obtained by the use of Lugol's solution and the usual supportive measures is desirable, but until recently no effective measures were available. Therefore these patients continued to cause the physician anxiety during the forty-eight hour postoperative period, and many of them required multiple stage operations to avoid severe reactions.

Recently a new group of substances with the power to decrease thyroid toxicity and to reduce the basal metabolic rate has been found. In 1941 the MacKenzies and McCollum,[2] in experimental work on rats, observed hyperplasia of the thyroid gland with a drop in the basal metabolic rate after the administration of sulfanilylguanidine. This action was not influenced by iodine but was abolished by thyroxin or desiccated thyroid. In 1942 this work was confirmed by Richter and Clisby [3] and by Kennedy,[4] who also observed similar results from the administration of thiourea derivatives. The following year Astwood and his co-workers [5] reported that thiourea, and especially thiouracil, was effective in inhibiting the function of the thyroid gland. Astwood [6] then suggested the use of these compounds in the treatment of clinical hyperthyroidism. He reported that 2 patients had relief of symptoms and a return to normal of the serum cholesterol and basal metabolic rate after one to two weeks of treatment.

In 1943 Williams and Bissell [7] confirmed Astwood's results. They reported that 9 unselected patients with thyrotoxicosis were treated with thiouracil and were relieved of toxic manifestations. The basal metabolic rate and blood iodine returned to normal in two to six weeks. Both exophthalmic and adenomatous goiters with hyperthyroidism responded to thiouracil.

Although thiouracil has not yet been proved to be curative, its ability to reduce the basal metabolic rate and improve the condition of the hyperthyroid patient suggested its use as a preoperative therapeutic measure

From the Department of Internal Medicine, the Lahey Clinic.

1. Plummer, H. S., and Boothby, W. M.: The Value of Iodine in Exophthalmic Goiter, Illinois M. J. **46**: 401-407 (Dec.) 1924.
2. MacKenzie, J. B.; MacKenzie, C. G., and McCollum, E. V.: Effect of Sulfanilylguanidine on the Thyroid of the Rat, Science **94**: 518-519 (Nov. 28) 1941.
3. Richter, C. P., and Clisby, K. H.: Graying of Hair Produced by Ingestion of Phenylthiocarbamide, Proc. Soc. Exper. Biol. & Med. **48**: 684-687 (Dec.) 1941; Toxic Effects of Bitter Tasting Phenylthiocarbamide, Arch. Path. **33**: 46-57 (Jan.) 1942.
4. Kennedy, T. H.: Thioureas as Goitrogenic Substances, Nature, London **150**: 223-234 (Aug. 22) 1942.
5. Astwood, E. B.; Sullivan, J.; Bissell, A., and Tyslowitz, R.: Action of Certain Sulfonamides and of Thiourea on the Function of the Thyroid Gland of the Rat, Endocrinology **32**: 210-225 (Feb.) 1943.
6. Astwood, E. B.: Treatment of Hyperthyroidism with Thiourea and Thiouracil, J. A. M. A. **122**: 78-81 (May 8) 1943.
7. Williams, R. H., and Bissell, G. W.: Thiouracil in the Treatment of Thyrotoxicosis, New England J. Med. **229**: 97-108 (July 15) 1943.

for the severely sick patient. Experience has shown that the basal metabolic rate and clinical toxicity cannot be returned to normal by iodine in the majority of cases. It was felt that, if thiouracil could accomplish this, its use would be of great help, since a normal or near basal rate would imply an ideal operative state with a minimum of anesthesia and postoperative reaction. This assumption was justified by the fact that a patient with mild hyperthyroidism who responds satisfactorily to Lugol's solution with resulting near normal basal metabolic rate tolerates surgery with little or no reaction.

This report, which is the result of studies started in May 1943, includes the first 11 severely toxic patients treated preoperatively with thiouracil.[8]

REPORT OF CASES

CASES 1 TO 8.—All 8 patients had severe hyperthyroidism with a high basal metabolic rate, except 1 (chart 1, patient 2), a woman 64 years of age with long standing hyperthyroidism, due to adenomatous goiter. One patient, a man aged 50 (chart 1, patient 5), had lost 55 pounds (25 Kg.) and had cardiac failure.

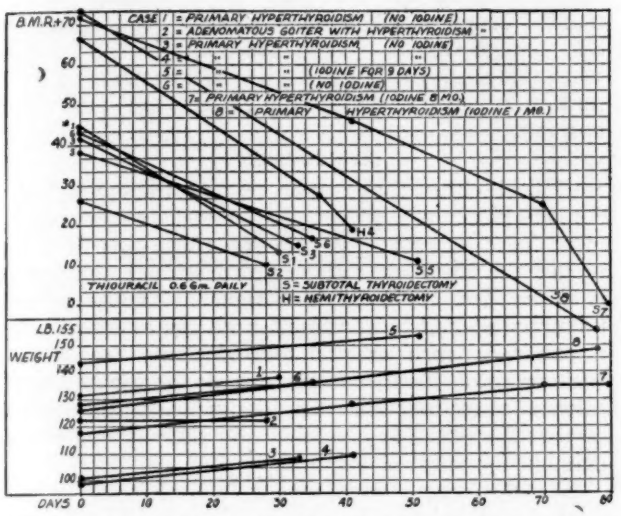

B.M.R.+70
CASE 1 = PRIMARY HYPERTHYROIDISM (NO IODINE)
2 = ADENOMATOUS GOITER WITH HYPERTHYROIDISM "
3 = PRIMARY HYPERTHYROIDISM (NO IODINE)
4 = " " " "
5 = " " " (IODINE FOR 9 DAYS)
6 = " " " (NO IODINE)
7= PRIMARY HYPERTHYROIDISM (IODINE 8 MO.)
8 = PRIMARY HYPERTHYROIDISM (IODINE 1 MO.)
THIOURACIL 0.6 Gm. DAILY
S = SUBTOTAL THYROIDECTOMY
H = HEMITHYROIDECTOMY
WEIGHT
LB.
DAYS

Chart 1.—Basal metabolic rate and weight in cases, 1, 2, 3, 4, 5, 6, 7 and 8.

In all 8 cases a lowering of the basal metabolic rate with concomitant clinical improvement was obtained. Two patients (chart 1, patients 5 and 6), who had taken iodine without clinical improvement before starting thiouracil treatment, showed a delay in the lowering of the basal metabolic rate. With the subjective and objective improvement there was a gradual and steady gain in weight.

Seven of these patients underwent a subtotal thyroidectomy with an extremely satisfactory anesthesia followed by an uneventful postoperative course. One patient (chart 1, patient 4) was submitted only to a hemithyroidectomy because of extreme enlargement of the thyroid gland and our lack of sufficient experience with the postoperative course of patients treated preoperatively with thiouracil. The anesthesia and postoperative course were excellent, and without a doubt the patient would have tolerated a subtotal thyroidectomy.

CASE 9.—A woman aged 54 had suffered from persistent toxicity for fifteen years, having had four previous operations (1928, 1929, 1931 and 1937) elsewhere on the thyroid gland (chart 2). There had been gradual loss of 30 pounds (13.6 Kg.) in weight, from 128 to 98 pounds (58.1 to 44.5 Kg.). Besides the emaciation, stimulation, prominence of the eyes and pronounced warmth of the skin, she showed evidence of mild cardiac decompensation. The pulse was totally irregular, the rate being 120 beats per minute. There were six firm thyroid remnants in the neck, each measuring about 2 cm. in diameter. The basal metabolic rate was + 65 per cent.

The usual treatment for a thyrocardiac patient was begun, consisting of bed rest, a high caloric diet with supplementary vitamins, 30 drops of Lugol's solution a day and digitalis. After fourteen days of this treatment the basal metabolic rate

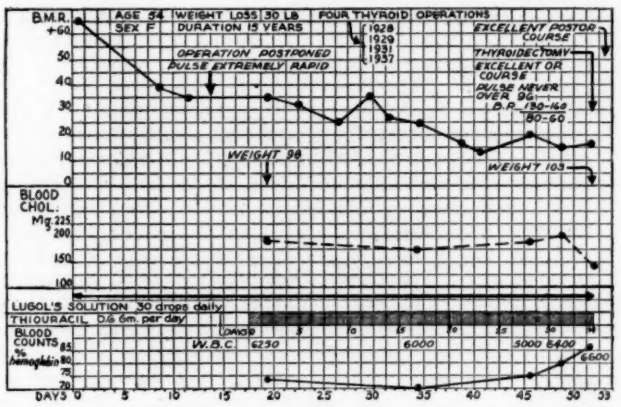


Chart 2.—Course in case 9.

had dropped to + 35 per cent, but there was only slight clinical improvement.

Removal of the thyroid remnants was planned, but with the induction of the anesthesia the pulse rate became so rapid that the operation was thought inadvisable. It was decided that, unless the condition of the patient could be improved further, surgery should not be undertaken.

The administration of thiouracil in the daily dose of 0.6 Gm. was started. During thirty-four days of treatment the basal metabolic rate gradually fell to + 16 per cent. The patient gained 5 pounds (2.3 Kg.) in weight and clinically was much improved. The thyroid remnants were then removed with satisfactory anesthesia and postoperative course.

CASE 10.—A woman aged 32 was admitted to the hospital with primary hyperthyroidism of seven years' duration (chart 3) and 20 pounds (9.1 Kg.) loss in weight, from 130 to 110 pounds (59 to 49.9 Kg.). During the seven years she had taken iodine without cure. The initial basal metabolic rate was + 56 per cent. After ten days of bed rest, a high caloric diet and 30 drops of Lugol's solution a day, the basal metabolic rate had dropped to + 22 per cent and the weight had

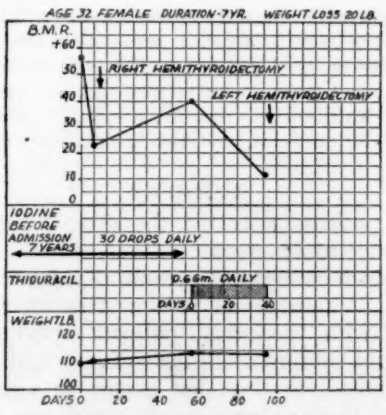


Chart 3.—Course in case 10.

increased 1 pound. Since the patient was still very toxic, only a right hemithyroidectomy was done. On the seventh postoperative day she was discharged from the hospital to continue on 30 drops of Lugol's solution a day and to return to the hospital in six weeks.

On readmission she was still extremely toxic, the basal metabolic rate being + 40 per cent. She was then started on 0.6 Gm. of thiouracil a day and discharged from the hospital.

8. The thiouracil was supplied by Dr. B. W. Carey, Lederle Laboratories, Inc., Pearl River, N. Y.

Forty days later the basal metabolic rate was + 11 per cent, and clinically she was much improved. A left hemithyroidectomy was done with satisfactory anesthesia and postoperative course.

CASE 11.—A man aged 40, first seen in September 1940, presented the typical picture of acromegaly and severe hyperthyroidism. Roentgenograms of the skull revealed an enlarged sella turcica. A large adenomatous goiter was present. The

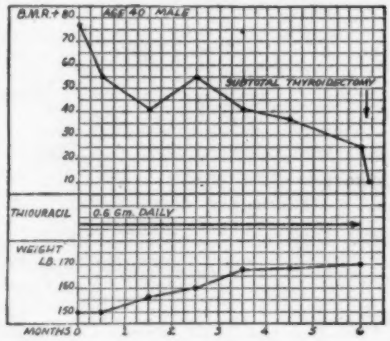


Chart 4.—Course in case 11.

basal metabolic rate was + 41 and + 43 per cent on two occasions, and the weight was 166 pounds (75 Kg.). He received Lugol's solution daily and five roentgen treatments to the sella turcica without improvement in his condition.

In July 1942 he received six roentgen treatments to the sella turcica without benefit. The basal metabolic rate at this time was + 64 per cent.

He was readmitted to the hospital on May 24, 1943. Since his previous visit his condition had become progressively worse. The weight had decreased from 166 pounds (75 Kg.) to 150 pounds (68 Kg.). Weakness of the legs prevented him from working. There was pronounced tremor of the hands and extreme sweating. The basal metabolic rate was + 72, + 90 and + 70 per cent on three occasions, with the pulse rate ranging from 100 to 116 beats per minute.

Thiouracil was begun, 0.6 Gm. a day, and he was discharged from the hospital. There was slow but definite improvement during the next six months (chart 4). The weight increased 20 pounds (9 Kg.) and the basal metabolic rate fell to + 25 per cent. At this time there was only a slight tremor, little sweating and great increase in strength.

One hundred and seventy-one days after thiouracil was begun a subtotal thyroidectomy was undertaken, a large adenomatous goiter, which was partially substernal, being removed. The anesthesia course was satisfactory. Postoperatively the patient developed laryngeal edema which necessitated a tracheotomy, but his convalescence was not prolonged. At the time of his dismissal from the hospital his basal metabolic rate was + 10 per cent, and two months later it was — 10 per cent.

COMMENT

All 11 patients tolerated the drug. None showed any of the toxic manifestations which have been reported, such as agranulocytosis, dermatitis, fever and urticaria. Within seven to ten days after beginning treatment with thiouracil, patients notice a gain in strength and subsidence of nervousness and palpitation. The appetite diminishes, but a gain in weight occurs. Objectively there is lessening of stimulation and tremor as well as lessening of edema of the lids in patients in whom eye signs are present. The skin is less warm and moist. The pulse rate slows and the basal metabolic rate falls. When the patient has received iodine before thiouracil administration, there is a slower drop in the basal metabolic rate. Contrary to experience with Lugol's solution, the objective and subjective improvement precedes the drop in the metabolic rate; that is, early in the course of treatment the patient appears better than the basal metabolic rate would indicate.

The thyroid gland remains the same in size and consistency. In primary hyperthyroidism the bruits and thrills over the superior poles persist. The failure of the primary hyperthyroid gland to involute causes the surgeon considerable technical difficulty because of extensive bleeding. Patient 8 (chart 1) received Lugol's solution for three weeks prior to surgery, with some involution of the thyroid gland, as indicated by decrease in the size of the gland and disappearance of the bruits and thrills. In spite of this change, the surgeon had some trouble with bleeding. The adenomatous goiter can be removed without difficulty.

The preoperative use of thiouracil in severe hyperthyroidism shortens the total time of treatment, reduces the hospital stay and limits the procedure to a subtotal thyroidectomy (chart 5). The average duration of treatment of severely toxic patients treated by Lugol's solution, in whom pole ligation with subsequent hemithyroidectomy is required, is 120 days, of which 55 days are spent in the hospital. When hemithyroidectomy is required, the average duration of treatment is 88 days, of which 35 days are spent in the hospital. With thiouracil treatment the average duration of treatment is 70 days, of which only 14 days are spent in the hospital.

CONCLUSIONS

Clinical observations indicate that thiouracil has a definite place in the preoperative management of the more toxic hyperthyroid patient. Since this drug can reduce the basal metabolic rate to normal, the patient is in an ideal condition for surgery. Treatment with thiouracil should be continued until the maximal effect is obtained, when subtotal thyroidectomy can be done without risk. Further experience in the use of Lugol's solution in conjunction with thiouracil will be necessary so that the gland is involuted and thereby made more suitable for surgical removal.

Eleven patients with severe hyperthyroidism were treated with thiouracil. The basal metabolic rate of all patients returned to a point at or near normal. Twenty days to six months of treatment was necessary to accomplish this result. Those patients with a considerably enlarged thyroid gland or who had received iodine before thiouracil treatment was begun required longer time to accomplish a satisfactory basal metabolic rate.

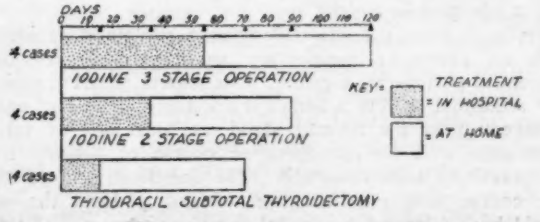


Chart 5.—Comparison of total treatment time, including hospital stay, of patients treated with iodine and those treated with thiouracil.

No toxic effects resulted following the daily dose of 0.6 Gm. The white blood cell and differential counts were carefully observed during the course of treatment, but no change occurred.

Patients with either primary hyperthyroidism or adenomatous goiter with hyperthyroidism responded equally well to thiouracil administration.

605 Commonwealth Avenue.

Clinical Notes, Suggestions and New Instruments

AN IMPROVED METHOD OF DEMONSTRATING OVA OF ENTEROBIUS VERMICULARIS

FREDERICK H. VON HOPE, M.D., EAST ORANGE, N. J.

The simplicity with which the ova of Enterobius vermicularis (pinworm) are recovered from the perianal area by the use of scotch tape is thought worthy of description.

The scotch tape is cut in strips about 2½ inches long and ⅜ inch wide. With the adhesive surface exposed, the tape is held over the closed end of a half inch test tube between the index finger and thumb. This is held firmly to the anus

Fig. 1.—Ova of Enterobius vermicularis under low power (× 56).

and rocked back and forth or from side to side to obtain a satisfactory smear. The tape is then applied to an ordinary glass slide, with the adhesive surface against the slide, and ironed out smoothly with the closed end of the test tube. The slide is then examined microscopically and it is not uncommon in positive cases to find groups of 3 to 6 ova and at times

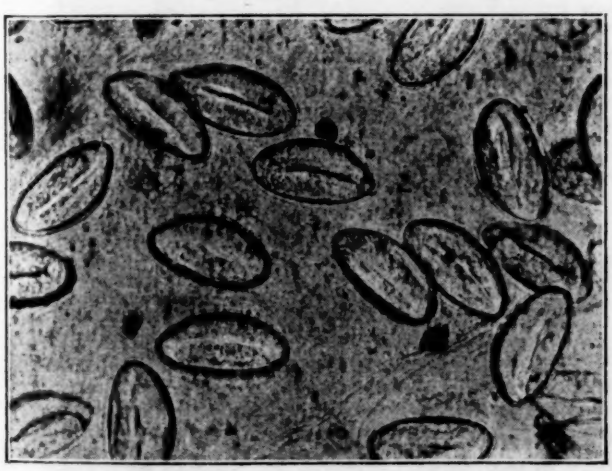


Fig. 2.—Ova under high power (× 280).

many more (figs. 1 and 2) in single fields without long periods of searching. The regularity with which the ova are demonstrated by this method gives greater significance to negative smears.

75 Prospect Street.

The photomicrographs were taken by Dr. Arthur Abel, pathologist at Orange Memorial Hospital, Orange, N. J.

ACUTE PANCREATITIS COMPLICATED BY TETANY

WILLIAM TREVOR, M.D., AND LOWELL BROWN, M.D., NEW YORK

This case is reported, first, because it may be the only proved case of acute hemorrhagic pancreatitis complicated by low calcium tetany (the blood calcium level being 5.4 mg. per hundred cubic centimeters) and, second, because of the possible light it throws on some of the problems of a disease about which little is known.

REPORT OF CASE

L. V., a white woman aged 48, who entered the New York Post-Graduate Hospital on Oct. 14, 1943, suffered an attack of severe epigastric pain, eighteen hours before, radiating through to the back and to the left shoulder. She was nauseated and on two occasions had vomited thin greenish fluid.

Her past history was essentially noncontributory until thirty days before, at which time she had been awakened from sleep by burning epigastric pain, which subsided promptly after the drinking of a glass of warm milk. She was apparently well until eight days before admission, when she had another similar attack of severe epigastric pain. The pain this time, however, was more severe and radiated through to her back. There was no nausea or vomiting. After this attack she was again perfectly well until the day of admission. She noticed, however, that after the most recent attack of pain her stools had become pale yellow and seemed "light in weight," since they floated. On the surface of the feces and floating on the water were "shiny" globules. The stools were not foul, nor was there any change in bowel habit. There was no history of previous indigestion of any sort.

The patient was well developed and well nourished and appeared acutely ill. The blood pressure was 160 systolic and 104 diastolic, the temperature 100.6 F. and the respiratory rate 25. The pulse was strong, and the rate was 126. The significant observations were limited to the abdomen, which was exquisitely tender and spastic throughout, despite three ¼ grain (0.015 Gm.) doses of morphine sulfate administered during the preceding twelve hours.

Preparations were made immediately for exploratory laparotomy. When the peritoneal cavity was opened, it was found to be filled with a hemorrhagic serous fluid, while everywhere there were dotted uniformly miliary areas of fat necrosis. The pancreas was indurated in some portions and friable and necrotic in others, and there was widespread hemorrhage into the substance of the gland. The gallbladder and ducts were entirely normal.

Postoperatively the patient continued to complain of abdominal pain, though, in the light of the operative findings, her condition was felt to be remarkably good. Therapy consisted in transfusion of whole blood, infusion of dextrose in isotonic solution of sodium chloride and in distilled water and adequate sedation.

Shortly after noon on the second postoperative day it was noted that the patient's hands exhibited a typical carpal spasm and that a strongly positive Chvostek sign and peroneal jerk could be elicited. The general condition of the patient seemed, despite these findings, entirely unchanged.

Intravenous therapy with calcium gluconate was started. Within a few seconds after the administration of calcium the carpal spasm had completely disappeared and the confirmatory signs were considerably weaker.

Forty-eight hours postoperatively a 500 unit ampule of parathyroid injection was administered intramuscularly. Fifteen to thirty minutes later the patient's pulse suddenly became thready, respirations became labored and shallow and she appeared toxic and weak. The rectal temperature was 106.4 F., without chill. An infusion of 5 per cent dextrose in isotonic solution of sodium chloride was started, and in about an hour she again seemed fairly well. Her temperature, however, remained over 106 F. for the next twelve hours.

The following day the patient's condition seemed, if anything, somewhat improved, and there was no evidence of tetany.

From the New York Post-Graduate Medical School and Hospital.
This case is reported through the courtesy of Dr. James J. Fleming of the Department of Surgery of the New York Post-Graduate Medical School and Hospital.

However, because of the extreme hyperpyrexia, intravenous injection of sodium sulfadiazine was instituted. Her condition gradually became worse, and she died early on the fourth postoperative day.

The blood for the only determination of calcium made on this patient was taken about one hour before she expired. The level of 5.4 mg. per hundred cubic centimeters is especially remarkable in that by the time this blood was obtained the patient had already received 500 units of parathyroid injection intramuscularly and 4 ampules (10 cc. each) of 10 per cent calcium gluconate intravenously.

The conditions observed at autopsy two hours post mortem were essentially those seen at operation, the cause of the pancreatitis remaining obscure. Miliary areas of fat necrosis were seen in the abdomen, and they also involved the subpleural areolar tissues, which further emphasizes the generalized nature of this disease. Microscopic observations confirmed the diagnosis of acute hemorrhagic pancreatitis. The parathyroid glands were composed almost entirely of clear cells, the significance of which is not known. Anatomically it is of interest that in this case the common bile duct and the pancreatic duct had a common opening into the duodenum.

COMMENT

Edmondson and Fields [1] in 1942 reported a case of acute hemorrhagic pancreatitis complicated by tetany. Typical carpopedal spasm was present, but neither Trousseau's nor Chvostek's sign could be elicited. Alkalosis as a cause of tetany was ruled out by a carbon dioxide combining power of 47 volumes per cent, but no blood calcium or other antemortem blood determinations were carried out. The authors therefore concluded that the cause of the tetany remained uncertain.

In a review of the literature Edmondson and Fields found 3 other reported instances of tetany complicating acute pancreatitis.[2] In the first 2 cases determinations of calcium were not made, though it is not unlikely that the tetany was of the low calcium variety. In the third case the blood calcium level was 10.3 mg., and the tetany, therefore, was probably not of the low calcium variety. No other cases of tetany associated with acute pancreatitis have been reported, to our knowledge, since the paper of Edmondson and Fields.

Edmondson and Fields [1] have given evidence in a series of 12 cases of acute pancreatitis that lowering of the blood calcium level frequently occurs in this disease. It is known, moreover, that the pathognomonic areas of fat necrosis are sometimes found scattered widely throughout the body (as in the present case). Such areas represent fat which has been broken down to fatty acids and glycerin through the action of blood borne and lymphatic borne pancreatic lipase, the fatty acids then combining in great part with calcium to form insoluble soaps—the chief constituents of the white areas of "fat necrosis." [3]

A probable cause for low calcium tetany, then, in acute pancreatitis is, as first suggested by Edmondson and Fields, the sudden withdrawal of calcium for combination with the fatty acids released by lipolytic digestion. When fat necrosis is massive, it is obvious that the amount of calcium withdrawn from the blood may be considerable.

A second way in which the blood calcium may be depleted is suggested by the present case, in which steatorrhea occurred secondary to pancreatic deficiency. It is known that pancreatic insufficiency is associated with poor digestion of fat and the loss of large amounts of partially digested fat in the feces. Calcium is found in excessive amounts in such stools in combination with the fatty acids as insoluble soaps.[4] Steatorrhea of any kind may produce a negative calcium balance, and in children tetany not infrequently occurs. In cases of pancreatitis, when the acute attack is superimposed on a chronic or subacute pancreatitis, steatorrhea may be one cause of a lowered blood calcium level.

1. Edmondson, H. A., and Fields, I. A.: Relation of Calcium and Lipids to Acute Pancreatic Necrosis: Report of Fifteen Cases, in One of Which Fat Embolism Occurred, Arch. Int. Med. **69**: 177-190 (Feb.) 1942.
2. Bertelsmann, R.: Postoperative Tetanie bei eitriger Cholecystitis und akuter Pankreasnekrose, Zentralbl. f. Chir. **54**: 324 (Feb. 5) 1927. Cibert, J., and Plauchu, M.: Pancreatite aiguë hémorragique et tétanie, Lyon méd. **152**: 587-590 (Nov. 26) 1933. Amano, M., and Murata, M.: Tetanie bei akuten Abdominalerkrankungen, Zentralbl. f. Chir. **63**: 694-698 (March 21) 1936.
3. Boyd, William: Surgical Pathology, ed. 5, Philadelphia, W. B. Saunders Company, 1942, p. 348.
4. Bodansky, Meyer, and Bodansky, Oscar: Biochemistry of Disease, New York. Macmillan Company, 1940, pp. 389-394.

CONCLUSIONS

1. A case of acute hemorrhagic pancreatitis complicated by tetany (blood calcium level, 5.4 mg. per hundred cubic centimeters) was observed.
2. A determination of the blood calcium level should be performed routinely in cases of acute pancreatitis. When calcium deficiency is present, replacement therapy is indicated.

303 East Twentieth Street.

PENICILLIN TREATMENT OF CAVERNOUS SINUS THROMBOSIS

VICTOR GOODHILL, M.D., LOS ANGELES

A 5 year old boy with acute fulminating bilateral cavernous sinus thrombophlebitis made a complete recovery when treated with penicillin,[1] after showing no response to sulfonamide-heparin therapy.

Thrombophlebitis of the cavernous sinus is one of those diseases the mortal aspect of which has cast an ominous shadow over infections of the face and head. Prior to the advent of sulfonamide therapy, reports of recovery and "cure" of this disease were rare.

Fig. 1.—Appearance before administration of penicillin.

When sulfonamides were first introduced, isolated cases of recovery began to appear. The addition of heparin to sulfonamide therapy further improved the statistics for survival in this previously highly fatal disease.

The present case is interesting in that (1) no response was noted following therapy with heparin and sulfathiazole and (2) prompt clinical response followed therapy with penicillin.

From the Departments of Otolaryngology, University of Southern California School of Medicine, and Childrens Hospital.

1. The penicillin was provided by the Office of Scientific Research and Development from supplies assigned by the Committee on Medical Research for clinical investigations recommended by the Committee on Chemotherapeutic and Other Agents of the National Research Council.

REPORT OF CASE

History.—E. A., a 5½ year old Mexican boy, had a "pimple" on his forehead on Sept. 29, 1943. On October 1 he fell and struck his head in some sand. The "pimple" began to swell and became painful, and there was accompanying fever. On the following day his face and eyes became swollen. He was admitted to the Childrens Hospital on October 3.

Physical Examination.—On the day of admission, October 3, the child was acutely ill, in moderate distress and with a temperature of 104.6 F.

There was an open draining furuncle in the midfrontal region between the supraorbital region and the hair line. Both eyes were completely swollen shut by edema of the upper lids. There was slightly less edema of the lower lids. There was slight conjunctivitis but no chemosis; extraocular muscular function was perfect. The pupils were equal and regular and reacted to light and in accommodation. There was no proptosis. Fundus examination showed slight venous congestion. The frontal edema extended upward from the furuncle to about 2 cm. above the hair line.

There was no nuchal rigidity, and the reflexes were normal. There were no other significant conditions observed on physical examination.

Laboratory Observations.—X-ray study of the frontal sinuses and frontal bone showed no pathologic changes.

sodium chloride was started intravenously. The preheparin clotting time (Lee White venous method) was two and a half minutes. Within four hours after the administration of 200 mg. of heparin (22,000 units), the clotting time was eight minutes.

On October 6 the child appeared almost moribund. Shallow, rapid respirations developed and he became cyanotic. Examination of the chest revealed evidence of metastatic pulmonary suppuration. He was placed in an oxygen tent and given constant intravenous fluids. Both eyes were completely shut, and bilateral proptosis was present. There was pronounced frontal edema. Shortly after administration of heparin was begun, free bleeding began to occur from the lesion on the forehead. The dosage of sulfathiazole was increased to 4 grains (0.26 Gm.) per pound in twenty-four hours and maintained by the use of sodium sulfathiazole by the intravenous in addition to the oral route.

In spite of this high intake, the highest blood level obtainable for sulfathiazole was 4 mg. per hundred cubic centimeters. On October 8, in spite of a clotting time of twelve and one-half minutes obtained by the total administration of 600 mg. of heparin within three days, with constant free bleeding from the wound, the child became steadily worse. The temperature curve remained septic, and the boy was in a comatose state.

Through the kindness of Dr. Paul Hamilton it was possible for us to start the administration of penicillin on October 8.

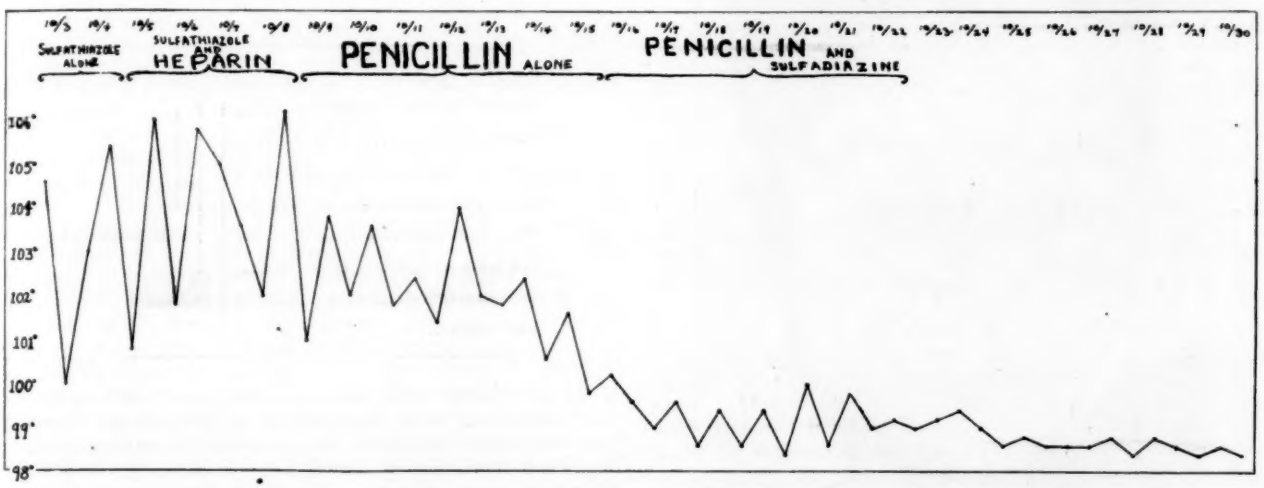


Fig. 2.—Temperature during period of treatment.

A blood count on October 4 revealed 31,500 leukocytes with 80 per cent neutrophils. The hemoglobin content was 82 per cent. The urine gave a 1 plus reaction for albumin.

Pus from the furuncle on culture yielded a coagulase positive nonhemolytic Staphylococcus aureus. Culture of blood taken on October 6 produced a growth of coagulase positive hemolytic Staph. aureus.

Diagnosis on Admission.—The diagnosis was furunculosis of the frontal region with probable thrombophlebitis of the frontal veins and superior branches of the facial veins.

Frank involvement of the cavernous sinus was not present on admission.

Course.—Immediately after the boy's admission oral administration of sulfathiazole in a dosage of 3 grains (0.2 Gm.) per pound (0.5 Kg.) in twenty-four hours was started. Hot compresses of a 1 per cent solution of sulfanilamide were applied continuously to the furuncle. On the second day, October 4, the frontal edema increased and began to involve the lower lids. The temperature curve was septic in character, reaching 106 F. The child became somewhat stuporous. On October 5 edema of the right lower lid became pronounced, and chemosis was noted in both eyes. Beginning engorgement of the retinal veins was apparent at the same time. Accordingly, it became obvious that the thrombophlebitic process was extending to the right and probably to the left cavernous sinus. In view of the lack of response to chemotherapy alone, a continuous drip of heparin in 5 per cent dextrose in isotonic solution of Administration of sulfathiazole and heparin was discontinued, and 100,000 Oxford units of penicillin was given intravenously in a 5 per cent solution of dextrose within the first twelve hours. There was an apparent dramatic response to penicillin, with an immediate drop in temperature to 103 F. Within twenty-four hours the child began to improve. The septic temperature curve ceased immediately after the administration of penicillin. Within seven days of penicillin therapy, the child became afebrile. During this time the only treatment consisted of administration of penicillin and several transfusions of blood and of serum for supportive reasons. The dosage of penicillin was approximately 100,000 units per day for the first three days, with progressively smaller doses for a total of fourteen days. A total dose of 975,000 Oxford units was given.

On October 15, in spite of striking clinical improvement, with diminution of proptosis, the blood on culture still yielded hemolytic Staph. aureus. In spite of the normal temperature, sulfadiazine was started by mouth. On October 20 the blood was sterile on culture. The only unusual reaction noted to penicillin was a generalized urticaria, which appeared on October 14 and lasted two days. On October 13 a left foot drop was noted.

Ophthalmoscopic consultation by Dr. Robert Hare on October 19 revealed subsiding bilateral proptosis, dilated superficial veins, ptosis of the left upper lid, total left external ophthalmoplegia, partial right external ophthalmoplegia, pallor of both

disks, bilateral macular edema and bilateral engorgement of the retinal veins. Dr. Hare concluded that the ocular conditions represented the end results of cavernous sinus thrombosis. There was apparently no vision at all in the left eye, but the patient was able to distinguish objects with the right eye at a distance of 2 feet.

Within ten days of penicillin therapy the frontal edema disappeared completely and the furuncle healed. On November 2 the patient was discharged, in excellent general physical condition with the exception of left foot drop, complete ptosis of the left upper lid, bilateral external ophthalmoplegia and early bilateral atrophy of the optic nerve.

The patient has been followed in the clinic, and when last seen, on Jan. 7, 1944, the left ptosis had disappeared completely and the right eye had almost perfect muscle function. The right disk was normal, and the left disk showed much less pallor.

Fig. 3.—Five days after treatment with penicillin.

COMMENT

1. It was quite likely from a clinical standpoint that we were dealing with thrombophlebitis of (*a*) the cavernous sinuses and (*b*) the frontal veins, with possible involvement of the cranial diploic veins, as well as the sagittal (superior longitudinal) sinus.

2. Large doses of heparin (sufficient to decrease the clotting time from two and a half to twelve and a half minutes as well as to reduce the hemoglobin content from 82 to 48 per cent) were of no avail when used for seven days with large doses of sulfathiazole (4 grains per pound in twenty-four hours).

3. The administration of penicillin intravenously was followed within twelve hours by a drop in temperature and by a clinical response.

4. At the time of writing, three months later, the patient is well except for partial ophthalmoplegia and optic neuritis.

SUMMARY

A 5 year old child was cured of bilateral cavernous sinus thrombophlebitis. Recovery followed the administration of penicillin intravenously after preliminary treatment with heparin and sulfathiazole had been of no avail.

676 South Westlake Avenue.

THE USE OF SULFATED OIL AS A SKIN CLEANSER IN THE MANAGEMENT OF ACNE VULGARIS

JACOB H. SWARTZ, M.D., AND IRVIN H. BLANK, PH.D.
BOSTON

It is unlikely that any one single factor is the cause of acne vulgaris. It is quite apparent, however, that there is almost always an overactivity of the sebaceous glands, which produces an increase in the amount of oily secretion on the surface of the skin of most patients. A well accepted principle in the treatment of acne vulgaris is the regular and relatively complete removal of this oily secretion from the cutaneous surface.

During recent years, various cleansing agents other than soap have been used for cleansing the skin. The sulfated oils [1] have been used primarily in the management of cutaneous diseases for which soap is contraindicated.[2] The term sulfated oil applies to any oil, fat, fatty acid or wax of animal or vegetable origin which has been "solubilized" by treatment with concentrated sulfuric acid. The sulfated oils mix well with both oil and water. They are efficient emulsifying agents, and it is thought that they cleanse the skin by means of emulsifying the oils on the cutaneous surface so that these oils can then be easily removed by rinsing with water. This cleansing is accomplished without the formation of lather.

TABLE 1.—*Types of Acne Vulgaris*

Lesions	Type of Acne Vulgaris
Oily and "muddy" complexion	Juvenile
Comedones	
Milia	
Few papulopustules	
Many papulopustules	Papulopustular
Few scars	
Sebaceous cysts	Indurated
Many scars	

In a discussion of a paper by Lane and Blank [3] on the use of sulfated oil as a detergent in a dermatologic ward, at the 64th annual meeting of the American Dermatological Association in 1941, Dr. McCarthy and one of us (J. H. S.) each stated that he had used the sulfated oils for cleansing the skin of patients with acne vulgaris. During the past four years we have prescribed a detergent containing 25 per cent sulfated oil, 25 per cent mineral oil and 50 per cent water [4] to over 400 patients with acne vulgaris in private practice and also to many clinic patients. Since the purpose of recommending sulfated oil is to bring about better cleansing of the skin, and since the sulfated oil is used in a different way than is soap, each patient should be told just how the sulfated oil should be used. We usually recommend that a small amount of the sulfated oil be poured into the palm of the left hand and then thoroughly rubbed over the unmoistened skin of the face with the fingers of the right hand in the same manner as when applying a cleansing cream. This "massaging" of the face with the oil should be carried on for from one to several minutes and be followed by thorough rinsing with warm water. Since the sulfated oils are completely miscible with water, they will be removed by the water and will carry with them the natural oil on the cutaneous surface, cosmetics and dirt. At the outset it is suggested that the skin be cleansed in this manner three times daily. The frequency of cleansing may be decreased as the skin becomes less oily. The patients easily adjust themselves to the use of a cleansing agent which

From the Department of Dermatology, Harvard Medical School, and the Massachusetts General Hospital.

1. Formerly referred to as "sulfonated oils."
2. Lane, C. G., and Blank, I. H.: Sulfonated Oil as a Detergent for Diseases of the Skin, Arch. Dermat. & Syph. **43**: 435-443 (March) 1941.
3. Lane, C. G., and Blank, I. H.: Sulfonated Oil as a Detergent: Its Use in a Dermatologic Ward, Arch. Dermat. & Syph. **44**: 999-1008 (Dec.) 1941.
4. This preparation is known as Acidolate.

does not lather, if they are told in advance not to expect a lather.

A sulfated oil is not a single chemical compound. Its composition will depend on the type of oil which has been sulfated and the method used to prepare the oil. In general the sulfated oils have been found to be nonirritating detergents, but it appears that, with certain processes of manufacture, by-products of sulfation may be formed and these by-products may irritate the skin. Up to the present time we have seen no patient with acne vulgaris in whom the sulfated oil has caused a dermatitis of the face.

TABLE 2.—*Lotion for Patients with Light Complexion*

	Gm. or Cc.
Calamine	4.0
Zinc oxide	8.0
Phenol	2.0
Glycerin	8.0
Spirit of camphor	4.0
Distilled water, ad	240.0

It is important to differentiate the sulfated oils from the sulfur soaps that have been used in the treatment of acne vulgaris. There is little or no free sulfur in the sulfated oils. The sulfur is chemically combined in the form of the sulfate group and cannot act as free sulfur. So far as can now be determined, the sulfated oil acts solely as a cleansing agent. When the action of sulfur is desired in the treatment of acne vulgaris, it is used in some other form of therapy. The choice of therapy will depend on the type of acne vulgaris being treated.

Acne vulgaris may be subdivided into three types, depending on the nature of the lesions, as is shown in table 1.

For all three types of acne vulgaris the following is recommended: (1) thorough cleansing with sulfated oil three times daily followed by the application of borated alcohol each time, (2) mechanical removal of comedones and (3) a diet. The cleansing technic has been described. The borated alcohol is prepared by mixing equal parts of saturated aqueous boric acid solution and 70 per cent ethyl alcohol. The patient is shown how to remove the comedones with a comedo extractor which has been sterilized by boiling. The patient should be instructed to remove comedones twice a week. Thorough cleansing with the sulfated oil and the application of borated alcohol should precede comedo removal, and the borated alcohol should also be applied after removal. Chocolate, nuts and cooked fats are eliminated from the patient's diet.

With this therapy the juvenile type of acne vulgaris usually shows a satisfactory response. Fewer comedones seem to form, and those which do form are sometimes removed by the cleansing alone.

For the papulopustular type of acne vulgaris, ultraviolet irradiation and the nightly use of a shake lotion are often added to the aforementioned therapy. For patients who have light complexions or for those whose skin is not very oily, the lotion given in table 2 is prescribed.

TABLE 3.—*"Drying" Lotion*

	Gm. or Cc.
Calamine	2.0
Zinc oxide	4.0
Phenol	1.0
Spirit of camphor	8.0
Precipitated sulfur	8.0
Alcohol	120.0
Distilled water, ad	240.0

For patients who have a dark complexion and for those whose skin is quite oily, a more "drying" lotion is prescribed (table 3).

This type of acne vulgaris seems to respond more satisfactorily to a combination of the shake lotion and the sulfated oil cleansing than to a combination of the same shake lotion and soap cleansing.

Roentgen therapy is most frequently used for the indurated type of acne vulgaris and especially when response to other types of therapy has been slow. Patients are always cautioned against the use of sulfur shake lotions and other irritating preparations when roentgen therapy is being used. Following roentgen therapy, sulfated oil cleansing and the lotion mentioned in table 2 are recommended.

Endocrine therapy is rarely used and only for those patients who seem to present some definite indication of an endocrine imbalance.

SUMMARY

Sulfated oils have been used successfully for cleansing the skin of patients with acne vulgaris.

In the juvenile type of acne vulgaris, such a cleansing method is usually sufficiently "drying" so that shake lotions are unnecessary. Borated alcohol may be used. A diet which eliminates chocolate, nuts and cooked fats is recommended. The patient is shown the correct method for the removal of comedones.

In the papulopustular type of acne vulgaris, shake lotions and ultraviolet therapy are also used.

For the indurated type of acne vulgaris, roentgen therapy is suggested, particularly if response to other types of therapy has been poor.

371 Commonwealth Avenue—Harvard Medical School.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

PURSUANT TO THE ACTION TAKEN BY THE COUNCIL AT ITS ANNUAL MEETING (J. A. M. A. **121**: 838 [MARCH 13] 1943) THE COUNCIL IS WITHHOLDING FROM THIS COLUMN STATEMENTS ON TESTS AND STANDARDS, ACTIONS, USES AND DOSAGE OF NEWLY ACCEPTED DRUGS WHICH MIGHT BE OF INTEREST TO THE ENEMY. THUS, SUCH STATEMENTS FOR SULFAMERAZINE, SULFAMERAZINE SODIUM, SULFAPYRAZINE AND SULFAPYRAZINE SODIUM ARE OMITTED UNTIL A FUTURE DATE. THEY WILL APPEAR IN THE COUNCIL PUBLICATION NEW AND NONOFFICIAL REMEDIES AND MAY BE OBTAINED FROM THE COUNCIL OFFICE ON REQUEST.

AUSTIN E. SMITH, M.D., Secretary.

SULFAMERAZINE.—4-Methyl-2-sulfanilamidopyrimidine.—Sulfamethyldiazine.—4-Methyl-2-sulfanilylaminopyrimidine.—*p*-Amino-N-2-(4-methylpyrimidyl) benzenesulfonamide.—$C_{11}H_{12}N_4O_2S$ (M. W. 264.30).

LEDERLE LABORATORIES, INC., PEARL RIVER, N. Y.

Sulfamerazine Powder (Unsterile): 114 and 454 Gm. packages.

Tablets Sulfamerazine: 0.25 Gm. and 0.5 Gm.

Ampul Solution Sulfamerazine 25% W/V: 10 cc.

SHARP & DOHME, INC., PHILADELPHIA

Sulfamerazine: bulk, 114 Gm. (unsterile).

Sulfamerazine Chemical Reagents (powder): 1 Gm. vial.

Tablets Sulfamerazine: 0.5 Gm. and 0.25 Gm.

PARKE, DAVIS & CO., DETROIT

Tablets Sulfamerazine: 0.5 Gm. in bottles of 100 and 1,000.

SULFAMERAZINE SODIUM.—The anhydrous sodium salt of 4-methyl-2-sulfanilamidopyrimidine.—$C_{11}H_{11}N_4O_2SNa$ (M. W. 286.29).

LEDERLE LABORATORIES, INC., PEARL RIVER, N. Y.

Ampul Solution Sodium Sulfamerazine 25% W/V: 10 cc.

SHARP & DOHME, INC., PHILADELPHIA

Sterilized Sodium Sulfamerazine: 5 Gm. vial.

SULFAPYRAZINE.—2-Sulfanilamidopyrazine.—2-Sulfanilyl aminopyrazine.—*p*-Amino-N-2-pyrazinyl benzenesulfonamide.—$C_{10}H_{10}N_4O_2S$ (M. W. 250.27).

MEAD JOHNSON & COMPANY, EVANSVILLE, IND.

Tablets Sulfapyrazine: 0.5 Gm.

SULFAPYRAZINE SODIUM.—The monohydrated sodium salt of 2-sulfanilamidopyrazine.—$C_{10}H_9N_4O_2S.Na.H_2O$ (M. W. 290.28).

MEAD JOHNSON & COMPANY, EVANSVILLE, IND.

Sodium Sulfapyrazine: 5 Gm. bottles.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, MAY 6, 1944

THE ANNUAL SESSION

The program for the annual session of the American Medical Association, which will be held in Chicago June 12-16, indicates the great advance that has been made by medical science in recent years. Panel discussions on tropical medicine, chemotherapy, plasma and neuropsychiatry, already arranged for the general scientific meetings, emphasize these chief lines of interest.

The very first paper scheduled for the Section on Practice of Medicine deals with penicillin. Additional manuscripts cover current topics, such as rheumatic fever, and there is a panel discussion on vitamins, amino acids and enzymes. In the Section on Surgery the use of surgical technics in hypertension and new technics related to methods of suture are featured. The opening session of the Section on Obstetrics is concerned with problems of pregnancy, but attention is given also to new studies with hormones and to complications related to tne bladder. A symposium on penicillin features the Section on Larnygology, and one on rheumatic fever appears in the Section on Pediatrics. Unusual is the symposium on the abuse of rest in the treatment of disease, scheduled for the Section on Experimental Medicine. Prominent in the program on nervous and mental diseases is the panel discussion on operational fatigue in combat air crews. All the newer investigations in the intensive and modern treatment of syphilis are included in a full session of the Section on Dermatology and Syphilology; in these discussions the investigators who have been doing most of the work for the Office of Scientific Research and Development are cooperating. New attitudes in industrial medicine and a consideration of the relocation of physicians in the postwar period are listed for the Section on Preventive and Industrial Medicine and Public Health. In the Section on Urology the new advances in the treatment of cancer of the prostate are noted, and in the Section on Orthopedic Surgery space is provided for the report of the committee which is making a joint investigation of the Kenny technic. The Section on Anesthesiology gives opportunity to hear the last word on continuous caudal analgesia. Especially interesting also are the sessions of the Section on Miscellaneous Topics, devoted on this occasion to the interests of the general practitioner.

The Scientific Exhibit and the other usual features of the annual session will be up to the standard of peacetime and will be highlighted as well by the interests associated with the needs of war. Attention is called to the motion picture theater, which will offer continuously from the first day the latest demonstrations utilizing visual education.

A specially arranged feature for this session is the war meeting planned for Wednesday night, June 14, at the Medinah Temple. This program will include not only the Surgeons General and other distinguished representatives of our own armed forces but also representatives of some of the United Nations.

The sessions of the House of Delegates of the American Medical Association will begin on Monday, June 12. Already there are indications that the House of Delegates will give its consideration to many problems of immediate importance to the practice of medicine now and in the postwar period.

On page 43 of this issue appears an invitation to members of the American Medical Association to visit the headquarters, which is in easy reach of the hotels in Chicago. The picture on page 42 indicates only slightly the scope of the innumerable activities that are carried out in the headquarters office for the advancement of medical science in the interest of the physician and of the public health. Physicians will find it well worth their while to take some portion of the time so much in demand during the week of the session to acquaint themselves fully with the various offices and bureaus in the headquarters office and to learn at first hand about the various services that are available.

THE SYNTHESIS OF GLYCOGEN IN THE TEST TUBE

Reproduction in the test tube of complicated biologic reactions is generally considered a necessary step in the understanding of complex living phenomena. For example, the hydrolysis of protein and conversely the synthesis of polypeptides from amino acids in vitro are landmarks in our understanding of protein metabolism. The same is true of carbohydrate metabolism and particularly the process by which glycogen is formed (glycogenesis) and broken down (glycogenolysis). The chemical reactions by which glycogen is broken down to form glucose have been known for some time. First is an interaction with phosphoric acid, called phosphorylation, under influence of the enzyme phosphorylase, which produces glucose-1-phosphate. This is then converted to glucose-6-phosphate by a conversion enzyme and finally to glucose. These reactions have

been carried out in the test tube with dialyzed extracts of muscle and other tissues containing the appropriate enzymes.

Many attempts were made to synthesize glycogen by making the first step in the reaction described proceed in a reverse direction, that is by starting with glucose-1-phosphate and producing glycogen plus inorganic phosphate. The successful test tube synthesis of glycogen in this way was described in a preliminary note several years ago by Dr. Carl F. Cori and his co-workers[1] at the Washington University Medical School. In this communication due credit was given to the concurrent publication of Kiessling,[2] who reported the same observation. However, the St. Louis investigators have described the kinetics and a detailed description of their research in a series of papers which has just appeared in a recent number of the *Journal of Biological Chemistry*.[3]

The solution of the problem of glycogen synthesis followed painstaking efforts which finally led to the purification of the crude tissue extracts by a variety of procedures and the successful isolation of the phosphorylating enzyme in crystalline form. The crude extracts did not work because they contained also the conversion enzyme, which of course continued the process of glycogenolysis, thus preventing glycogenesis. Once this enzyme was freed from other enzymes and purified, it was possible to produce glycogen in vitro from synthetic glucose-1-phosphate with the liberation of inorganic phosphate in a simple and striking manner. Indeed, glycogen appeared within six minutes; moreover, 91 per cent of the calculated amount of the polysaccharide could be demonstrated in a short time. While adenylic acid was first thought necessary as a co-enzyme, it was later shown to be merely a prosthetic group attached to one of the phosphorylases.

The enzymatic synthesis in vitro of the polysaccharide glycogen from simple synthetic material was thus first demonstrated and indeed proved to be quite simple with many fundamental implications. First it showed that the same enzyme, phosphorylase, brings about both the last step in glycogen synthesis and the first step in glycogen hydrolysis. This demonstrates a well known phenomenon in biologic reactions, namely that the same enzyme may be active in opposite directions, depending on the presence or absence of other enzymes. In this case the reaction of synthesis was achieved by removing one of the enzymes concerned with a later step in glycogen breakdown.

Enzyme reactions are at the very heart of all biologic processes; only by knowledge of their mechanism will a true understanding be reached as to the real behavior of all vital mechanisms. This applies to phenomena of disease as well as of health. While most of this research seems remote from the bedside, it is true only because this type of investigation is in the vanguard of scientific advance. Patients of the future will probably enjoy in a gratifying way the results of enzyme research which may well enable the physician by an injection of appropriate catalysts so to alter the biologic mechanisms as to counteract many of the deleterious effects of disease or to stimulate the beneficial reactions necessary for life and health.

1. Cori, C. F.; Schmidt, G., and Cori, G. T.: Science **89**: 464, 1939.
2. Kiessling, W.: Biochem. Ztschr. **302**: 50, 1939.
3. Cori, C. F., and others: J. Biol. Chem. **151**: 21-63 (Nov.) 1943.

AGE AND CARCINOGENIC EFFECT OF ESTROGENS IN MICE

The relation between age and the incidence of cancer is only partially understood. Crossen and Hobbs found that 60 per cent of women with uterine carcinoma still continued to menstruate after the age of 50 years, while among a large number of women not affected by uterine carcinoma menstruation occurred in only 15 per cent at this late age. These observations support the conclusion that the long continued action of ovarian hormones may be of significance in the origin of carcinoma, not only in the mammary gland, the cervix and the vagina, but also in the fundus of the uterus. Crossen and Loeb[1] injected into older mice 100 or 200 rat units of estradiol benzoate weekly. These mice belonged to three strains with a low tendency toward formation of mammary carcinoma. The period of the injections ranged between two and one-half and seven and three-fourths months. The ovaries of these animals were studied in serial sections, while many sections were made through various parts of the vagina, the cervix, the uterus and the mammary glands. The microscopic studies revealed the following types of stimulation under the influence of ovarian hormones: (*a*) There was first intensification of normal growth processes, especially in the epithelium of the vagina and cervix, which did not return to the resting stage in these older experimental mice in contrast to older control mice. (*b*) Abnormal growth processes that had not as yet reached the precancerous or the cancerous stage were represented by lateral expansive and invasive growth of the vaginal and cervical epithelium, by invasive growth of the uterine glands, which perforated the muscularis, by the peculiar papillary growth processes noted in some areas of the uterine surface, epithelium and glands in certain mice, and by the proliferative processes found in the peritoneal endothelium of some mice and, lastly, in the ovaries of older mice by the growth of ductlike structures which were derived from proliferating germ epithelium of medullary ducts. (*c*) Precancerous processes were observed in the mammary glands and in the vagina and cervix. In the former they were the result of intensification of the normal growth processes, and in the vagina and cervix they were apparently super-

1. Crossen, R. J., and Loeb, Leo: Effect of Long Continued Administration of an Estrogen on the Sex Organs of Mice Which Have Passed the Reproductive Period, Arch. Path. **37**: 202 (March) 1944.

imposed on the growth processes leading first to invaginations of the surface epithelium and then to the production of solid epithelial processes leading into the stroma. The last mentioned changes may lead to cancerous processes; these were found in the older experimental mice only in the mammary gland, but they may be expected to occur also in the vagina and cervix.

Apparently different kinds of tissues, in the same individual or species, respond to the same kind of stimulation with different degrees of intensity. This differential responsiveness is due not to unequal distribution of stimulating substances in the vagina and cervix and in the mammary gland but to the inherence in each of these tissues of its own characteristic mode of response to these stimuli. The mammary gland is the most responsive. There follow in decreasing order the epithelium of the vagina and cervix and, last, the various uterine structures.

The authors conclude that these investigations do not indicate that the tissues in older animals are more liable to cancerization than those in younger animals. On the contrary, the decrease in growth energy noted with advancing age should counteract the tendency to cancerous change. Likewise, the denser nature of the stroma by interfering with the nourishment of the tissues should primarily have such an inhibiting effect; yet indirectly these conditions might favor the production of cancer. The authors believe that the main cause for the greater incidence of cancer in old animals consists in the accumulation in certain tissues with advancing age of stimuli to growth and in the sensitization which may occur as a result. In addition to this accumulation of growth stimuli in the form of hormones there may be a development of secondary nonhormonal factors which induce growth processes, and the association of the secondary with the primary hormonal stimuli may in certain instances intensify the proliferative processes which ultimately lead to cancer. As such secondary processes the authors have recognized the long continued removal of the upper layers of the vaginal epithelium by mechanical means and the chronic inflammatory processes in the uterus, which may help to induce papillary and invasive proliferation of the peritoneal endothelium. The authors believe that the mechanism by which these stimuli lead to cancerization, in all probability, consists in the production within the affected cells of intermediate products, autocatalytically propagating substances, which are the direct cause of increased cell activities and ultimately of cancer. These stimuli would therefore induce chain processes which would give rise to the essential growth factors leading to cancernization. The tissues of older and those of younger organisms seem to differ only quantitatively in their reactions as far as growth processes and cancerous processes are concerned.

Current Comment

FOOD AND DRUGS COMMISSIONER RESIGNS

Information from Washington indicates that Mr. Walter G. Campbell, Commissioner of Food and Drugs, of the Food and Drug Administration, which is a division of the Federal Security Agency, resigned his position on April 29. Thus far official publicity has not appeared indicating any reason for the resignation or the future action to be taken in the administration of this division of the federal government. The Food and Drug Administration is, however, of tremendous interest to the medical profession, since it is charged with the enforcement of the Food, Drug and Cosmetic Act, Tea Act, Import Milk Act, Caustic Poison Act and the Filled Milk Act. Its activities are concerned with the promotion of the purity, standard potency, truthful and informative labeling of food, drugs and cosmetics. It is charged also with determining the purity of such materials as are utilized by the armed forces. Problems related to the advertising of these commodities are a function of the Federal Trade Commission. In his position as Commissioner of Food and Drugs Mr. Walter G. Campbell has made an enviable record—respected by every one for his justice, courage and scientific attitudes. He has been aided in his work by a competent staff, including the associate commissioner, Mr. Paul B. Dunbar, and a fine group of chemists and physicians. It would be unfortunate if any considerations might prevail that would interfere with the maintenance of this important agency on a standard any less than that which it has had under Mr. Campbell's direction or if the continuity of its services should be allowed to lapse in any way during the period of change.

INTELLIGENCE AND SEASON OF CONCEPTION

An association between season of birth, or conception, and intelligence has been repeatedly postulated. Fitt,[1] for example, selected for contrast (with suitable reversal in the Southern Hemisphere) the birth months May to October corresponding to the conception months August to January as the winter children, and the birth months November to April, corresponding to the conception months February to July, as the summer children. It has been shown conclusively, according to Roberts,[2] that children whose time of conception is centered in the winter months are on the average somewhat more intelligent than those conceived during the other half of the year. Two explanations of the difference are suggested: first, that the season of conception influences intelligence or, second, that intelligence influences conception. A simple way of distinguishing between the two possibilities is available, Roberts says. Children born of the same parents can be compared, i. e. winter children with their summer brothers or

1. Fitt, A. B.: Seasonal Influence on Growth, Function and Inheritance, Wellington, New Zealand, and London, Oxford University Press, 1941.
2. Roberts, J. A. Fraser: Intelligence and Season of Conception, Brit. M. J. 1: 320 (March 4) 1944.

sisters. A second line of inquiry is to determine the number of sibs of comparable groups of winter and summer children. Should it be intelligence which influences season of conception, winter children not only will be more intelligent but will have fewer brothers and sisters. A statistical analysis along these lines throws interesting light on the subject. When winter children were compared with their summer brothers and sisters, measured by the advanced Otis intelligence test, the differences vanished. It was also shown that while winter children differ from summer children in intelligence they differ even more in having fewer sibs. Thus, according to Roberts, the observed association between the time of conception and intelligence is to be ascribed not to seasonal influences on the mother or the developing child but to a tendency for the children of more intelligent parents to be conceived slightly more often in winter, those of less intelligent parents slightly more often in summer. Fascinating as this statistical acrobatics may be, it is not necessary for any one to suffer needless alarm if their birth dates happen to classify them as summer children!

MUSCLE SPASM IN POLIOMYELITIS

The Kenny concept and treatment of poliomyelitis have aroused special interest in the muscle spasm said to be characteristic of the disease and against which that treatment is especially directed. The muscles in spasm are painful on stretch or pressure, and the condition may lead to dysfunction and deformity. Spasm is claimed to be present in every case, but there appears to be no direct relation between it and motor paralysis. The mechanism of muscle spasm in poliomyelitis is now the subject of active investigation.[1] Results at hand agree that the spasm is not due primarily to any process within the muscle but that it is a reflex phenomenon. On the basis of their own work and after consideration of recent research in the physiology of the spinal cord by Lloyd and others, Bouman and Schwartz conclude that in poliomyelitis impulses from higher centers inhibitory of muscular contraction "are blocked in very close proximity to the motor neurons." Kabat and Knapp report that in acute and subacute poliomyelitis spinal anesthesia by means of procaine "led to relaxation of muscle spasm to a marked extent." In 1 case the intravenous injection of beta-erythroidine hydrochloride was followed by definite relaxation of muscle spasm and of pain on passive motion. This drug blocks the myoneural junction. These investigators also found that, in the dog, temporary arrest of circulation in the spinal cord caused changes in the internuncial pathways and resultant muscle spasm. Finally, they report that in some 68 cases of poliomyelitis an internuncial cord lesion was found almost constantly and that in 26 of these cases the internuncial lesion was accompanied by "relatively normal anterior horn cells." Measurements of chronaxia did not give any evidence of relation between muscle spasm and damage to the neurons in the anterior horns. These brief references to current investigations of poliomyelitis spasm show that significant results are being obtained. The spasm is apparently neurogenic and due to the blocking of reflexes by lesions in the gray matter of the cord; also the spasticity is influenced by anesthesia and by drug action. These results indicate progress, and we look forward hopefully for scientific contributions to the treatment of the muscle spasm of poliomyelitis.

1. Bouman, H. D., and Schwartz, R. P.: The Degree, the Extent and the Mechanism of Muscle Spasm in Infantile Paralysis, New York State J. Med. **44**: 147 (Jan.) 1944. Kabat, H., and Knapp, M. E.: The Mechanism of Muscle Spasm in Poliomyelitis, J. Pediat. **24**: 123 (Feb.) 1944.

FAINTING DURING BLOOD DONATION

Fainting which may occur in blood donors during the bleeding procedure does not have a serious significance. The symptoms are distressing nevertheless. In four blood centers in England [1] the incidence of fainting was relatively small averaging about 5.5 per cent of the total number of over 5,000 donors. The data collected from 362 blood donors who fainted during the bleeding procedure were studied in comparison with those of 335 unselected donors who did not exhibit subjective or objective symptoms. Evidence was not obtained that factors such as age, occupation, length of wait at the center before bleeding, difficulties in bleeding, length of time since the last meal and presence of menstruation assumed any contributory role in producing or facilitating fainting. Sex appears to be a relatively significant factor in influencing the incidence of fainting. Symptoms were more frequent in women, especially in single women, than in men. Actually the only finding susceptible of control was that a high proportion of donors who fainted gave a history of fainting at previous bleedings or on some other occasions not related to blood donation. This suggests that, whenever possible, these persons should not be used as blood donors. Better and more complete knowledge of the neurocirculatory disturbance and reactions elicited by bleeding is necessary in order to devise controlling measures for the associated symptoms.

1. Fainting in Blood Donors, Brit. M. J. **1**: 279 (Feb. 26) 1944.

SALIVARY AMYLASE AND DENTAL CARIES

A clear relationship between salivary amylase and the incidence of dental caries is reported by Turner and Crane [1] of the Forsyth Dental Infirmary, Radcliffe College. In order to establish this relationship, the rate of starch hydrolysis by saliva was determined under standard test conditions. In persons without dental caries this hydrolysis required approximately forty-five minutes for completion. The saliva of those with four to six cavities completed the hydrolysis within nineteen minutes, those with ten to twelve cavities within seven minutes, and those with twenty to thirty cavities in less than two minutes. Without exception the rate of starch hydrolysis increased in direct parallelism with the number of cavities. Of 51 carefully studied cases not 1 was found in which the salivary starch splitting rate was an exception to this rule. The origin and nature of this qualitatively or quantitatively increased buccal amylolytic enzyme is now under investigation.

1. Turner, N. C., and Crane, E. M.: Science **99**: 262 (March 31) 1944.

MEDICINE AND THE WAR

ARMY

FACILITIES PROVIDED FOR TISSUE PATHOLOGY IN U. S. ARMY

The War Department recently issued the Technical Bulletin of Medicine number 19 concerning the facilities provided for tissue pathology in the U. S. Army. As laboratory officers with specialized training in histopathology are not available for assignment to all hospital laboratories, the following plan has been organized and developed by the Curator, Army Medical Museum, Washington 25, D. C., to provide expert service for all army installations. Large laboratories have been selected as "histopathologic centers." Specially trained personnel will be assigned to these centers, and the laboratories will be supplied with the facilities required for this work.

The following histopathologic centers have been selected:

Service Command	Location of Center
First	Lovell General Hospital, Fort Devens, Massachusetts
Second	Second Service Command Laboratory, 1309 Federal Office Building, 90 Church Street, New York
Third	Valley Forge General Hospital, Phoenixville, Pa.
Fourth	(a) Lawson General Hospital, Atlanta, Ga. (b) Stark General Hospital, Charleston, S. C. (c) Thayer General Hospital, Nashville, Tenn.
Fifth	Billings General Hospital, Fort Benjamin Harrison, Indiana
Sixth	Sixth Service Command Laboratory, Fort Sheridan, Illinois
Seventh	(a) O'Reilly General Hospital, Springfield, Mo. (b) Fitzsimons General Hospital, Denver
Eighth	(a) Brooke General Hospital, Fort Sam Houston, Texas (b) William Beaumont General Hospital, El Paso, Texas (c) Army and Navy General Hospital, Hot Springs, Ark.
Ninth	(a) Hoff General Hospital, Santa Barbara, Calif. (b) Letterman General Hospital, San Francisco (c) Barnes General Hospital, Vancouver, Wash. (d) Bushnell General Hospital, Brigham City, Utah

Medical laboratories ordinarily will use the histopathologic center in their own service command which is most accessible to them, but in exceptional and urgent cases and if more convenient from the standpoint of transportation they may submit their material to the nearest general hospital. General hospitals which have adequate professional and technical equipment to complete examinations may send their necropsies and selected surgical material direct to the Army Medical Museum. The histopathologic centers will forward to the Army Medical Museum all completed necropsies and such surgical cases as have possible future administrative or "follow-up" value, particularly tumors and those specimens requiring final or confirmatory diagnosis. Facilities for consultation in all fields of tissue pathology have been established by the Army Medical Museum. Specimens will therefore not be submitted primarily to other than army laboratories except to meet a local emergency (AR 40-410). Letters of transmittal are not desired. All information should be in the protocol, or an M.D. Form 55 M. AR 40-410 authorizes direct correspondence between the Curator, Army Medical Museum, the histopathologic centers and the chiefs of laboratory services.

DIAGNOSIS AND TREATMENT OF TRICHOMONAS VAGINALIS VAGINITIS

In the Technical Bulletin of Medicine number 8 of the War Department the method of managing cases of Trichomonas vaginalis vaginitis occurring in the military service is discussed. The demonstration of the causative organism establishes the diagnosis. Trichomonas, which is a motile flagellate, can be easily identified by microscopic examination of a fresh wet preparation, preferably employing the weighing drop. No one method of treatment is satisfactory in all cases. The following is considered especially applicable to ambulatory patients: After the diagnosis has been established, tampons medicated with acetarsone are dispensed. These are to be inserted morning or evening and removed at the end of twelve hours. One tampon a day is used during the first week of treatment and one on alternate days thereafter for three weeks except during menstruation, when changes will be made as frequently as necessary. If, after a menstrual period, microscopic examination should reveal the continued presence of the organisms, the same regimen should be continued for a second month. Following either the one or two months period of treatment, use of the tampons will be continued during menstruation for three periods. Whenever practicable, during a course of treatment, a vaginal douche containing 1 tablespoon of either vinegar or sodium perborate in a quart of warm water is used once a week, but not oftener. If symptoms recur, a second course of therapy can be instituted after an interval of one month without treatment, but a thorough study to eliminate the possible presence of complications such as bladder infections or nonspecific endocervicitis should be conducted before a recurrence is assumed. During a course of therapy with acetarsone tampons the patient must be observed for urticaria, dermatitis, purpura or any other sign of arsenical susceptibility. Discomfort or inability to use tampons will necessitate the use of the drug in the form of tablets, which should be inserted by the medical officer. Following discontinuance of treatment, microscopic examinations of vaginal secretions should be made after each menstrual period for at least three months. The patient must be informed that douches or vaginal medication of any type should not be used for thirty-six hours prior to this examination.

U. S. ARMY TRANSPORT JOHN L. CLEM DESIGNATED AS ARMY HOSPITAL SHIP

The War Department, Washington, D. C., in General Orders No. 28, states that on Feb. 24, 1944 the U. S. Army transport *John L. Clem* was designated as a United States Army hospital ship in accordance with international practice, as set forth in the provisions of the Hague Convention X of 1907. In the future the United States Army hospital ship *John L. Clem* will be operated in accordance with the provisions of applicable treaties. Notification of this designation was delivered, through channels, to the Hungarian and Rumanian governments on March 10, to the Japanese government on March 11 and to the Thai government on March 13. The ship's master of this and all other United States military hospital ships will at all times maintain sufficient copies of this general order for presentation to any authorized agent of an enemy belligerent who may require it for inspection.

FINE DISPENSARY SERVES UNITED STATES TROOPS ABROAD

Two general dispensaries in the London area were recently combined to form the most complete overseas dispensary in the world, so that the United States Army personnel can have the best possible medical attention. This medical installation is supervised by Major Franklin D. Cooper, formerly of Oakmont, Pa., and was the first to be set up in the British Isles. In 1942 the unit was both a hospital and a dispensary treating medical, surgical and lying-in cases alike, but as army general hospitals were installed this dispensary eliminated its wards until now it specializes in medical, light surgical treatment and laboratory and x-ray diagnosis. Every doctor in this dispensary is a specialist in his field. The dispensary gives regular medical attention to officers, enlisted men, Wacs, civilians working for the Army, and members of the casts of USO camp shows. In addition, in emergencies, civilians and others who are air raid casualties are tended. There is a woman doctor and four WAC assistants who attend Wacs and civilian women working for the U. S. Army. Classes are conducted by specialists on

the staff for other officers and enlisted men attached to the dispensary to add further to their medical knowledge and so help keep the American soldier the "best taken care of in the world."

CLINICAL CONFERENCE ON RECENT ADVANCES ON MEDICINE IN WARTIME

A twelve hour conference on the recent advances of medicine in wartime was held at the municipal theater in North Africa at Oran, which was attended by physicians, surgeons and dentists of the French, British and American armed forces. Col. Howard J. Hutter was responsible for organizing the conference. Lectures on the latest advancements of battlefront medication, surgery, sanitation, dentistry, therapeutics and control were presented. The convention was so large and wide in scope that it was necessary to utilize the Oran Conservatory of Music and the Lycée Lamoricière buildings to house the many exhibitions and demonstrations.

The fundamental purpose of the conference was to establish a better understanding and spirit of liaison among the civilian, military and naval members of the medical profession who now occupy the Mediterranean base section, the department of Oran and the division of Oran to a furtherance of our allied effort, by a mutual exchange of ideas and methods in the latest and most approved advance in medicine, surgery, sanitation and preventive medicine.

173,000 CASUALTIES EVACUATED BY U. S. AIRCRAFT IN 1943

During 1943 more than 173,000 sick and wounded patients of United States and allied forces were evacuated by American military aircraft throughout the world. The total, based on reports from the Air Surgeon, Major Gen. David N. W. Grant, U. S. Army, to the commanding General of the Army Air Forces, Gen. H. H. Arnold, U. S. Army, is divided as follows:

Eleven air forces overseas	161,541
Eleven air transport command wings overseas	8,687
AAF, continental United States	3,299
	173,527

These figures refer to sick and wounded patients admitted to a medical service and therefore include not only nonbattle casualties but also persons who have been air evacuated more than once from one hospital to another. For this reason these figures cannot be compared with totals appearing in battle casualty lists.

In all, 3,260 individuals were evacuated from theaters of operation into the United States aboard Air Transport Command airplanes. The totals of patients evacuated in the major theaters of operation are as follows: New Guinea, 70,808; Solomon Islands, 24,767, and Tunisia, Sicily and Italy, 58,479.

MEDICAL ADMINISTRATIVE OFFICER AWARDED LEGION OF MERIT

Capt. Thomas O. Matthews, M. A. C., formerly of Angleton, Texas, has been awarded the Legion of Merit for "exceptionally meritorious conduct in the performance of outstanding service, exhibiting courage, fidelity and resourcefulness from Sept. 11 to 18, 1943 during the initial phases of the installation of an evacuation hospital. With a bare minimum of transportation at his disposal he efficiently and expeditiously directed the transportation of the hospital equipment from landing beaches while under bombardment from the air. During blackout and frequent exposure to shell fragments from antiaircraft fire he worked ceaselessly for four successive days and nights, directing the enlisted personnel of the detachment in the erection and installation of the hospital. His tireless efforts after the erection of the hospital in directing the maintenance of the installation and its equipment and his contribution to the high standard of efficiency and morale in the organization during this period of stress greatly aided the commanding officer in the successful administration of the unit."

COL. PAUL K. SAUER AWARDED LEGION OF MERIT

Col. Paul K. Sauer, formerly of New York City, has been awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services from Sept. 9 to Sept. 15, 1943 as commanding officer, . . . Evacuation Hospital. Colonel Sauer led his command ashore on the day of the Allied landings in Italy and for the next three days worked tirelessly, organizing his personnel and assembling equipment. He opened his hospital for the reception of patients Sept. 12, 1943 although handicapped by air raids, blackout conditions, incomplete personnel and equipment, and lack of water. Largely as a result of his outstanding leadership and sincere devotion to duty, the . . . Evacuation Hospital was able to care for over 1,000 patients during its first four days of operation, thus saving many lives and alleviating much suffering. Colonel Sauer had so perfected the training of his unit that enlisted men took the place of nurses in the wards and operating rooms with skill and confidence. The professional judgment, inspiring leadership and unerring sense of duty displayed by Colonel Sauer are in keeping with the highest traditions of the military service," Dr. Sauer graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1913 and entered the service in June 1942.

COL. ROLLIN L. BAUCHSPIES AWARDED LEGION OF MERIT

Col. Rollin L. Bauchspies, formerly of Washington, D. C., has been awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding service. Colonel Bauchspies led the personnel of his hospital over the beaches near Paestum, Italy, following the initial assault troops. There he regrouped his personnel and collected his equipment, which had been scattered along 5 miles of beach, and established a station within twelve hours. Handicapped by lack of nurses and incomplete equipment, Colonel Bauchspies opened his hospital for the reception of patients with eleven surgical tables in operation and hundreds of patients cared for with skill, sympathy and expediency, reflecting highest credit on the administrative ability of Colonel Bauchspies and the state of training he had achieved in his organization. On September 23 the hospital was expanded to 25 per cent above its normal capacity and, through the exercise of sound judgment, determined will and the utmost consideration for the welfare of its patients, many lives were saved. The unselfish devotion to duty displayed by Colonel Bauchspies contributed greatly to the morale of the Army and is in keeping with the highest traditions of the military service." Dr. Bauchspies graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1928. He entered the service early in 1941.

CAPT. HARRY C. SMITH JR. WINS CITATION

Capt. Harry C. Smith Jr., formerly of Aberdeen, Wash., was a member of the regiment combat team cited by the President for achievement in the New Guinea campaign. Dr. Smith had previously received the Purple Heart award for wounds received in New Guinea and had been presented with the Silver Star for gallantry in action. He was recently transferred to a headquarters medical battalion somewhere in Australia. Dr. Smith graduated from the University of Oregon Medical School, Portland, in 1937 and entered the service in July 1941.

FLIGHT SURGEONS' ASSISTANTS

A class of 113 flight surgeons' assistants completed the six weeks course in aviation medicine at the School of Aviation Medicine, Randolph Field, Texas, January 14. These men are trained as specialists in assisting flight surgeons in the selection, care and maintenance of the flier. Brig. Gen. Eugen G. Reinartz, U. S. Army, is commandant of the school.

MISCELLANEOUS

DISTRIBUTION OF PENICILLIN FOR USE BY CIVILIANS

The War Production Board recently announced the establishment of a nationwide system for a limited civilian distribution of penicillin. The new system is now in operation. The system through which penicillin is channeled to over 1,000 depot hospitals, which are now selected, is centered in Chicago, where a WPB Office of Civilian Penicillin Distribution has been established at the WPB Regional Office at 226 West Jackson Boulevard. Dr. John N. McDonnell, who has been associated with the Drugs and Cosmetics Section of the Chemicals Bureau for two and one-half years as chief of its Research and Statistics Unit, has been named director of the new Office of Civilian Penicillin Distribution. J. Solon Mordell, chief of the Crude Drugs and Biologicals Unit of WPB's Office of Civilian Requirements, also is attached to the Chicago Office as the representative of the Office of Civilian Requirements. In addition, Dr. Chester S. Keefer of Boston, chairman of the Committee on Chemotherapy of the National Research Council and consultant to the Office of Scientific Research and Development, who has been in charge of the small emergency distributions of penicillin made to date, is also stationed in Chicago to act as medical adviser while the program is being established.

The distribution will be carried out as follows: Each month each penicillin manufacturer will apply to the War Production Board in Washington for a civilian quota based on the amount of his production. The list of individual manufacturers' allocations will then be forwarded to the Office of Civilian Penicillin Distribution in Chicago, which will assign quotas to each of the depot hospitals. Each of the hospitals will then order against its quota, sending its order to Chicago. The final function of the Chicago office will be to assign the hospital order to the penicillin manufacturers. Once the orders have been assigned to the manufacturers, the penicillin will be handled in conformity with established trade practices, the manufacturers shipping direct to the hospitals and invoicing according to their own customs. The quotas to be assigned to the hospitals to be selected for initial distribution will be established on the basis of bed capacities in the hospital in relation to the total number of depot hospitals, the number of hospitals in their areas and the available supply of penicillin. Depot hospitals will be expected to recognize the requests of other hospitals and, when their need has been established, to furnish penicillin for their purchase to the best of their ability in consideration of their supply on hand. In the event a hospital not on the designated list is unable to obtain penicillin from a designated depot hospital in its area, it may communicate direct with the director of civilian penicillin distribution in Chicago, who will endeavor to provide the penicillin so requested either by transfer of stocks from some other hospital or direct from a manufacturer in the established method.

As the initial penicillin supplies are expanded, officials said, any hospital allotment may be increased if special considerations warrant and more hospitals may be added to the initial list of depot institutions in order to permit broader distribution. Such new depot hospitals will be given quotas for direct purchase. To guide the hospitals in the use of the new drug, a report summarizing present medical knowledge regarding it has been prepared by Dr. Keefer and will be circulated by the Chicago office. All hospitals will be bound by these instructions and recommendations. The program now decided on has been approved by all the interested government agencies, by medical and scientific bodies and by the Penicillin Producers Industry Advisory Committee of the War Production Board.

Assisting the Office of Civilian Penicillin Distribution in carrying out the program will be an advisory panel headed by Fred Stock, chief of the Drugs and Cosmetics Section of the WPB Chemicals Bureau. The members of the panel are Dr. Keefer; Dr. William Ossenfort, medical director, chief of Hospital Division, U. S. Public Health Service; Dr. Victor Johnson, Hospital Division, American Medical Association, and Dr. Robert Fischelis, chief of the Chemicals, Drugs and Health Supplies Branch of WPB's Office of Civilian Requirements. This panel is charged with the work of selecting the depot hospitals.

WPB order M-338, under which penicillin has been allocated, is being amended to incorporate the new distributive procedure. No changes will be made in personnel of the Washington office now directing the penicillin program. Roy S. Koch, chief of the Biological and Parenteral Solution Unit of the Drugs and Cosmetic Section, is administrator of the order.

When the supply of penicillin for civilian uses increases to the point where it is considered ample, the interim procedure now being established for its distribution will be discontinued, officials said, and all manufacturers will employ their respective methods of commercial distribution through whatever channels they prefer.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, April 29, page 1260)

ILLINOIS

St. Francis Hospital, Evanston. Capacity, 377; admissions, 8,416. Sister M. Florina, R.N., Superintendent (interns—October 1).

MASSACHUSETTS

House of the Good Samaritan, Boston. Capacity, 83, admissions, 119. Miss Elma J. Hussey, R.N., Superintendent (resident, cardiology).

NEW JERSEY

Passaic General Hospital, Passaic. Capacity, 275; admissions, 5,661. Miss Margaret A. Wallace, R.N., Superintendent (2 interns).

NEW YORK

Children's Hospital, Buffalo. Capacity, 302; admissions, 6,440. Mr. Moir P. Tanner, Superintendent (assistant resident, pediatrics—July 1).

PENNSYLVANIA

Williamsport Hospital, Williamsport. Capacity, 275; admissions, 5,994. Mr. D. W. Hartman, Superintendent (2 interns—October 1).

TRAINING CHINA'S YOUNG ARMY OF MEDICAL AIDES

Lieut. Gen. Robert Kho-sheng-Lim, chief of the Supervising and Planning Commission of the Chinese Army Medical Service, who recently arrived in this country on a military mission, announced through the National War Fund (46 Cedar Street, New York 5) that the burden of the medical treatment of wounded Chinese soldiers is being shouldered by 8,000 young Chinese men and women between 17 and 25 years of age. These young medicos are known as junior medical aides and go into the field after intensive training of six and even three months. General Lim stated that there are only about 6,000 fully trained M.D.'s in Free China today, of which 3,000 are serving with the Chinese army. The training of China's young army of medical aides is accomplished in six emergency medical service training schools, which were organized partly with funds supplied by the American Bureau for Medical Aid to China and which are today being supported by funds obtained by United China Relief through the National War Fund. Since the need for their services is so great, only the most basic medical training and instruction in only the most common diseases can be given to the junior medical aides. The training consists of instruction in first aid, in setting bones and treating fractures, in immunization, in preventive medicine and in general sanitation. Graduates of the emergency medical service training schools go into small towns or villages near the front lines and set up medical stations and dispensaries.

General Lim organized the Chinese Red Cross Medical Relief Corps in 1937 and created hundreds of mobile operating units, known as "hospitals on muleback," which for seven years have operated as near as a half mile to the fighting lines. In June 1943 General Lim was awarded the Legion of Merit.

WAR PRODUCTION BOARD EASES RESTRICTIONS ON THE MANUFACTURE AND SALE OF PHYSICAL THERAPY EQUIPMENT

The War Production Board recently announced that restrictions on the manufacture and sale of physical therapy equipment have been eased and that medical practitioners and hospitals may now buy certain types of equipment that formerly were restricted to these groups and to hospitals. In addition, three types of physical therapy equipment, generally approved by the medical profession for home use, may now be sold to the public on prescription or order of a licensed medical practitioner. Action was taken on April 7 by amending order L-259 (physical therapy equipment). The order as issued in February 1943 placed strict control on production and distribution of this equipment and prohibited the manufacture of most types except for the armed services and lend-lease. Types that may now be manufactured are those most needed for general use. They are listed in schedule A of the order as follows: electric bakers, fever cabinets, galvanic generators, infra-red generators, low voltage generators, magnetic field generators, medical diathermy units, passive vascular exercise apparatus, surgical diathermy units, ultraviolet radiation equipment and whirlpool baths. These items may be sold to the armed services, to lend-lease, for licensed export orders, to hospitals and medical departments of industrial concerns, to medical practitioners and to distributors for delivery for these users.

Three types of equipment in schedule A (electric bakers, infra-red generators and ultraviolet radiation equipment) may be sold or rented to the public on written prescription of a medical practitioner licensed to use physical therapy equipment. Formerly the only types that could be made for civilian use (hospitals) were electric bakers, fever cabinets, major ultraviolet radiation equipment, passive vascular exercise apparatus and surgical diathermy units. Monthly scheduling reports are no longer required from manufacturers. However, quarterly reports of shipments of electric bakers, infra-red generators and ultraviolet radiation equipment to purchasers other than the armed services and lend-lease must be made by manufacturers. One combined dollar value figure is required. Distribution controls established by the order are designed to place the equipment that may now be manufactured in the hands of those having an urgent need for it, the War Production Board said.

COMMUNITIES IN NEED OF PHYSICIANS

The following five communities have applied to the U. S. Public Health Service for federal assistance in obtaining the services of physicians under the recently enacted law authorizing an appropriation of $200,000 for the relocation of physicians:

Pineville (Mecklenburg County) North Carolina.
Star (Montgomery County) North Carolina.
Glenrock (Converse County) Wyoming.
Waxhaw (Union County) North Carolina.
Leola (McPherson County) South Dakota.

Physicians interested in locating in these communities should communicate with the Surgeon General, United States Public Health Service, Washington (Bethesda Station), D. C.

NATION FACES VITAMIN A DEFICIT

The Fish and Wildlife Service of the Department of the Interior recently warned that the nation faces a vitamin A deficit and that the soupfin shark fishery, chief United States source of vitamin A, apparently is being rapidly depleted. Service scientists pointed out that landings in February were 70 per cent below those of February 1943, although fishermen had intensified their efforts and were using more gear. February landings of domestic soupfin shark livers at Seattle, center of the fishery, were 83,960 pounds, as compared with 280,781 pounds in the same month of 1943. The service also announced that vitamin A stock held by producers and pharmaceutical houses as of February 29 in the form of livers, liver oils and concentrates totaled approximately 51 trillion units. At the end of February 1943 holdings amounted to 88 trillion units. Indications are that the consumption of vitamin A in this country now exceeds production, the service said. The soupfin shark has an exceptionally large liver, which is pressed for oil. The oil contains the highest known natural concentration of vitamin A of any species taken in the United States fisheries. Other shark livers are also of some importance to processors, but vitamin A concentrations in them are considerably lower. The soupfin shark fishery was increasing before the war as a result of the generally rising use of vitamin products. With the advent of war, which cut off foreign sources of supply, the price of soupfin shark livers rose to a high point of $9.25 a pound at one time. The price was 18.6 cents a pound in 1937. The current price runs from $6 to $7 a pound.

NATIONAL INDUCTION OF U. S. CADET NURSE CORPS MAY 13

The Division of Nurse Education, U. S. Public Health Service, in cooperation with the National Nursing Council for War Service, is holding a U. S. Cadet Nurse Corps National Induction on May 13. The program will be broadcast from Constitution Hall, Washington, D. C., over the N. B. C. network from 4:30 to 5 p. m. eastern war time.

The speakers will include Mrs. Franklin D. Roosevelt, Hon. Paul V. McNutt, administrator of the Federal Security Agency, Mrs. Frances P. Bolton, Congresswoman from Ohio, who sponsored the act establishing the Cadet Nurse Corps, and Miss Lucile Petry, Cadet Nurse Corps director. Helen Hayes will give a dramatic presentation. Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, will administer the U. S. Cadet Nurse Corps induction pledge to 700 uniformed cadet nurses in Washington. The U. S. Navy Symphony, under the direction of Lieut. Charles Brendler, U.S.N.R., will introduce the new U. S. Cadet Nurse Corps march.

While the national induction is taking place in Washington, cadet nurses throughout the country will assemble in listening groups, wearing either corps or school uniforms, and will stand at attention as Dr. Parran administers the pledge over the radio. Schools of nursing and state and local groups are being asked to plan special ceremonies around the broadcast.

PUBLIC HEALTH UNDER HITLER

According to a recent release from the Netherlands Information Bureau, the shortage of physicians has become so serious in Germany that the Nazi labor office in the Netherlands is planning to deport from five hundred to two thousand Dutch physicians to the reich. Ostensibly their services will be reserved for Netherlands workers in Germany, but actually they will be used to treat German soldiers and civilians. The Dutch underground newspaper *Trouw* has seen through this subterfuge and in a recent issue exhorted the Netherlands doctors to resist deportation as effectively as they resisted German efforts to nazify the medical profession in the past. "The danger of deportation to Germany is great," the paper pointed out. "We must count on new large scale efforts on the part of the Germans to deport from five hundred to two thousand doctors. Already all doctors have been ordered to register at the labor office. The watchword must be 'No Dutch doctor goes voluntarily to Germany.'"

Trouw gave the following reasons why doctors should resist deportation: "It is most improbable that the Germans would allow them to treat Dutch workers—Netherlands medical students in Germany are often employed as doctors, but never in Dutch labor camps. If they go to Germany for the benefit of the German workers they will be rendering an important service to the enemy. Once deportation of doctors begins, it will not be stopped—there would be a calamitous shortage of doctors in the Netherlands."

Anton Mussert, head of the Dutch Nazi party, had indicated at the annual meeting of the nazified "Medical Front" that the Germans were planning to conscript five hundred to one thousand Netherlands physicians and asserted "We will do our utmost to force these immoral unpatriotic doctors, who want to leave their compatriots in Germany without medical care, to do their duty."

ORGANIZATION SECTION

THE CHICAGO SESSION

AMERICAN MEDICAL ASSOCIATION, NINETY-FOURTH ANNUAL SESSION

CHICAGO, JUNE 12-16, 1944

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The ninety-fourth annual session of the American Medical Association will be held in Chicago, June 12-16, 1944.

The House of Delegates will convene at 10 a. m. Monday, June 12. In the House the representation of the various constituent associations for 1944, 1945 and 1946 is as follows:

Alabama	2	New Hampshire	1
Arizona	1	New Jersey	5
Arkansas	2	New Mexico	1
California	8	New York	20
Colorado	2	North Carolina	2
Connecticut	3	North Dakota	1
Delaware	1	Ohio	8
District of Columbia	1	Oklahoma	2
Florida	2	Oregon	1
Georgia	3	Pennsylvania	11
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	2	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	2
Maryland	2	Washington	2
Massachusetts	6	West Virginia	2
Michigan	5	Wisconsin	3
Minnesota	4	Wyoming	1
Mississippi	2	Alaska	1
Missouri	4	Hawaii	1
Montana	1	Isthmian Canal Zone	1
Nebraska	2	Philippine Islands	2
Nevada	1	Puerto Rico	1

The sixteen scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting, to be held at 8 p. m. Tuesday, June 13. The sections will meet Wednesday, Thursday and Friday, June 14, 15 and 16, as follows:

CONVENING AT 9 A. M. THE SECTIONS ON	CONVENING AT 2 P. M. THE SECTIONS ON
Practice of Medicine.	Surgery, General and Abdominal.
Obstetrics and Gynecology.	Ophthalmology.
Laryngology, Otology and Rhinology.	Pediatrics.
Pathology and Physiology.	Experimental Medicine and Therapeutics.
Preventive and Industrial Medicine and Public Health.	Nervous and Mental Diseases.
Urology.	Dermatology and Syphilology.
Orthopedic Surgery.	Gastro-Enterology and Proctology.
Anesthesiology.	Radiology.
Miscellaneous Business: Sessions for the General Practitioner.	

The Registration Department, which will be located in the Hotel Stevens, will be open from 8:30 a. m. until 5:30 p. m. Monday, Tuesday, Wednesday and Thursday, June 12, 13, 14 and 15, and from 8:30 a. m. to 12 noon Friday, June 16.

JAMES E. PAULLIN, President.
H. H. SHOULDERS, Speaker, House of Delegates.
OLIN WEST, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover members of the House of Delegates and of the newly elected members who have been reported to the Secretary in time to be included:

STATE DELEGATES

ALABAMA
A. A. Walker, Birmingham.
Lloyd Noland, Fairfield.

ARIZONA
Harold W. Kehl, Tucson.

ARKANSAS
William R. Brooksher, Fort Smith.

CALIFORNIA
Edward N. Ewer, Oakland.
William H. Kiger, Los Angeles.
Robert A. Peers, Colfax.
William R. Molony Sr., Los Angeles.
Dwight L. Wilbur, San Francisco.
Lyell C. Kinney, San Diego.
Lowell S. Goin, Los Angeles.
Henry S. Rogers, Petaluma.

COLORADO
Walter W. King, Denver.
John Andrew, Longmont.

CONNECTICUT
James R. Miller, Hartford.

DELAWARE
James Beebe, Lewes.

DISTRICT OF COLUMBIA
C. B. Conklin, Washington.

FLORIDA
Edward Jelks, Jacksonville.
H. L. Pearson Jr., Miami.

GEORGIA
William A. Mulherin, Augusta.
Allen H. Bunce, Atlanta.
Olin H. Weaver, Macon.

IDAHO
Edward N. Roberts, Pocatello.

ILLINOIS
Robert H. Hayes, Chicago.
Mather Pfeiffenberger, Alton.
C. E. Wilkinson, Danville.
Lee O. Frech, Decatur.

INDIANA
H. G. Hamer, Indianapolis.
George R. Dillinger, French Lick.
Don F. Cameron, Fort Wayne.
F. S. Crockett, La Fayette.

IOWA
Ransom D. Bernard, Clarion.

KANSAS
J. F. Hassig, Kansas City.
Forrest L. Loveland, Topeka.

KENTUCKY
J. B. Lukins, Louisville.
Virgil E. Simpson, Louisville.

LOUISIANA
Leon J. Menville, New Orleans.
James Q. Graves, Monroe.

MAINE
Thomas A. Foster, Portland.

MARYLAND
Thomas S. Cullen, Baltimore.
Alfred T. Gundry, Baltimore.

MASSACHUSETTS
Allen G. Rice, Springfield.
Richard H. Miller, Boston.
David D. Scannell, Boston.
Dwight O'Hara, Boston.
Charles E. Mongan, Somerville.
Walter G. Phippen, Salem.

MICHIGAN
Henry A. Luce, Detroit.
T. K. Gruber, Eloise.
Claude R. Keyport, Grayling.
Leo G. Christian, Lansing.
Frank E. Reeder, Flint.

MINNESOTA
W. A. Coventry, Duluth.
A. W. Adson, Rochester.
Francis J. Savage, St. Paul.
E. W. Hansen, Minneapolis.

MISSISSIPPI
J. P. Wall, Jackson.

MISSOURI
Robert E. Schlueter, St. Louis.
James R. McVay, Kansas City.

MONTANA
J. H. Irwin, Great Falls.

NEBRASKA
Roy W. Fouts, Omaha.
Karl S. J. Hohlen, Lincoln.

NEW HAMPSHIRE
Deering G. Smith, Nashua.

NEW JERSEY
Thomas K. Lewis, Camden.
Hilton S. Read, Atlantic City.
Wells P. Eagleton, Newark.
Andrew F. McBride, Paterson.
Lucius F. Donohoe, Bayonne.

NEW MEXICO
H. A. Miller, Clovis.

NEW YORK
James R. Reuling Jr., Bayside.
Edward R. Cunniffe, New York.
William D. Johnson, Batavia.
Thomas M. Brennan, Brooklyn.
Clarence G. Bandler, New York.
Floyd S. Winslow, Rochester.
Walter P. Anderton, New York.
Oliver W. H. Mitchell, Syracuse.
Albert A. Gartner, Buffalo.
Edward C. Podvin, New York.
Louis H. Bauer, Hempstead.
Thomas A. McGoldrick, Brooklyn.
James M. Flynn, Rochester.
George W. Kosmak, New York.
Louis A. Van Kleeck, Manhasset.
John J. Masterson, Brooklyn.
F. Leslie Sullivan, Scotia.
Walter W. Mott, White Plains.
J. Stanley Kenney, New York.
William Hale, Utica.

NORTH CAROLINA
W. C. Davison, Durham.
Ross S. McElwee, Statesville.

NORTH DAKOTA
A. P. Nachtwey, Dickinson.

OHIO
Barney J. Hein, Toledo.
Parke G. Smith, Cincinnati.
William M. Skipp, Youngstown.

OKLAHOMA
A. S. Risser, Blackwell.

OREGON
Morris L. Bridgeman, Portland.

PENNSYLVANIA
Francis F. Borzell, Philadelphia.
James H. Corwin, Washington.
Walter F. Donaldson, Pittsburgh.
Charles H. Henninger, Pittsburgh.
Leonard G. Redding, Scranton.
Robert L. Anderson, Pittsburgh.
William L. Estes Jr., Bethlehem.
J. Newton Hunsberger, Norristown.
Joseph Scattergood Jr., West Chester.
Alexander H. Stewart, Harrisburg.
Charles G. Strickland, Erie.

RHODE ISLAND
Alex M. Burgess, Providence.

SOUTH CAROLINA
T. A. Pitts, Columbia.

SOUTH DAKOTA
N. J. Nessa, Sioux Falls.

TENNESSEE
E. G. Wood, Knoxville.
H. B. Everett, Memphis.

TEXAS
Holman Taylor, Fort Worth.
Francis J. Blasingame, Wharton.

UTAH
John Z. Brown, Salt Lake City.

VERMONT
Benjamin F. Cook, Rutland.

VIRGINIA
J. Morrison Hutcheson, Richmond.
Walter B. Martin, Norfolk.

WASHINGTON
R. L. Zech, Seattle.
John H. O'Shea, Spokane.

WEST VIRGINIA
Walter E. Vest, Huntington.
Ivan Fawcett, Wheeling.

WISCONSIN
Stephen E. Gavin, Fond du Lac.
James C. Sargent, Milwaukee.
William D. Stovall, Madison.

WYOMING
George P. Johnston, Cheyenne.

HAWAII
F. J. Pinkerton, Honolulu.

ISTHMIAN CANAL ZONE
Lewis B. Bates, Ancon.

PUERTO RICO
Oscar G. Costa-Mandry, Santurce.

DELEGATES FROM THE SECTIONS AND GOVERNMENT SERVICES

PRACTICE OF MEDICINE
Fred M. Smith, Iowa City.

SURGERY, GENERAL AND ABDOMINAL
Henry W. Cave, New York.

OBSTETRICS AND GYNECOLOGY
Jean Paul Pratt, Detroit.

OPHTHALMOLOGY
Arthur J. Bedell, Albany, N. Y.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Burt R. Shurly, Detroit

PEDIATRICS
William Weston, Columbia, S. C.

EXPERIMENTAL MEDICINE AND THERAPEUTICS
O. P. J. Falk, St. Louis

PATHOLOGY AND PHYSIOLOGY
L. W. Larson, Bismarck, N. D.

NERVOUS AND MENTAL DISEASES
Henry R. Viets, Boston.

DERMATOLOGY AND SYPHILOGY
Clyde L. Cummer, Cleveland.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH
Stanley H. Osborn, Hartford, Conn.

UROLOGY
Roy B. Henline, New York.

ORTHOPEDIC SURGERY
J. Archer O'Reilly, St. Louis.

GASTRO-ENTEROLOGY AND PROCTOLOGY
Louis A. Buie, Rochester, Minn.

RADIOLOGY
E. H. Skinner, Kansas City, Mo.

ANESTHESIOLOGY
H. S. Ruth, Merion Station, Pa.

UNITED STATES ARMY
George F. Lull.

UNITED STATES NAVY
Harold W. Smith.

UNITED STATES PUBLIC HEALTH SERVICE
Warren F. Draper.

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1943-1944

PRESIDENT—James E. Paullin, Atlanta, Ga.

PRESIDENT-ELECT—Herman L. Kretschmer, Chicago.

VICE PRESIDENT—John W. Amesse, Denver, Colo.

SECRETARY AND GENERAL MANAGER—Olin West, Chicago.

TREASURER—J. J. Moore, Chicago.

SPEAKER, HOUSE OF DELEGATES—H. H. Shoulders, Nashville, Tenn.

VICE SPEAKER, HOUSE OF DELEGATES—R. W. Fouts, Omaha.

EDITOR—Morris Fishbein, Chicago.

BUSINESS MANAGER—Will C. Braun, Chicago.

BOARD OF TRUSTEES—Roger I. Lee, Chairman, Boston, 1944; E. L. Henderson, Louisville, Ky., 1944; Ralph A. Fenton, Portland, Ore., 1945; James R. Bloss, Huntington, W. Va., 1945; C. W. Roberts, Atlanta, Ga., 1946; Edward M. Pallette, Los Angeles, 1947; R. L. Sensenich, South Bend, Ind., 1947; William F. Braasch, Rochester, Minn., 1948; Ernest E. Irons, Secretary, Chicago, 1948.

JUDICIAL COUNCIL—Edward R. Cunniffe, New York, 1944; George Edward Follansbee, Chairman, Cleveland, 1945; Walter F. Donaldson, Pittsburgh, 1946; Lloyd Noland, Fairfield, Ala., 1947; John H. O'Shea, Spokane, Wash., 1948; Olin West, Secretary, ex officio, Chicago.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS—Charles Gordon Heyd, New York, 1944; H. G. Weiskotten, Syracuse, N. Y., 1945; Ray Lyman Wilbur, Chairman, Stanford University, Calif., 1946; John H. Musser, New Orleans, 1947; Harvey B. Stone, Baltimore, 1948; Reginald Fitz, Boston, 1949; Russell L. Haden, Cleveland, 1950; Victor Johnson, Secretary, Chicago.

COUNCIL ON SCIENTIFIC ASSEMBLY—J. Gurney Taylor, Milwaukee, 1944; A. A. Walker, Chairman, Birmingham, Ala., 1945; Frederick A. Coller, Ann Arbor, Mich., 1946; Clyde L. Cummer, Cleveland, 1947; Edward L. Bortz, Philadelphia, 1948, and ex officio, the President-Elect, the Editor and the Secretary of the Association.

COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS—Louis H. Bauer, Chairman, Hempstead, N. Y.; A. W. Adson, Rochester, Minn.; John H. Fitzgibbon, Portland, Ore.; W. S. Leathers, Nashville, Tenn.; E. J. McCormick, Toledo, Ohio; James R. McVay, Kansas City, Mo.; Olin West, Chicago; Roger I. Lee, Boston; James E. Paullin, Atlanta, Ga.; Fred W. Rankin, Washington, D. C.; G. Lombard Kelly, Secretary, Chicago.

COUNCIL ON PHARMACY AND CHEMISTRY (Standing Committee of Board of Trustees)—Morris Fishbein, Chicago, 1945; G. W. McCoy, New Orleans, 1945; Perrin H. Long, Baltimore, 1945; Elmer M. Nelson, Washington, D. C., 1945; Torald Sollmann, Chairman, Cleveland, 1946; E. M. Landis, Boston, 1946; E. L. Sevringhaus, Madison, Wis., 1946; E. M. K. Geiling, Chicago, 1947; W. W. Palmer, New York, 1947; S. W. Clausen, Rochester, N. Y., 1947; R. P. Herwick, Washington, D. C., 1948; C. S. Keefer, Boston, 1948; H. N. Cole, Cleveland, 1948; Stuart Mudd, Philadelphia, 1948; James P. Leake, Washington, D. C., 1949; David P. Barr, New York, 1949; Austin E. Smith, Secretary, Chicago.

COUNCIL ON PHYSICAL THERAPY (Standing Committee of Board of Trustees)—A. U. Desjardins, Rochester, Minn., 1945; H. B. Williams, New York, 1945; Frank H. Krusen, Rochester, Minn., 1945; Anthony C. Cipollaro, New York, 1946; M. A. Bowie, Bryn Mawr, Pa., 1946; G. M. Piersol, Philadelphia, 1946; W. E. Garrey, Nashville, Tenn., 1947; W. W. Coblentz, Washington, D. C., 1947; John S. Coulter, Chairman, Chicago, 1947; Eben J. Carey, Milwaukee, 1948; Frank R. Ober, Boston, 1948; Frank D. Dickson, Kansas City, Mo., 1948; Morris Fishbein, ex officio, Chicago; Howard A. Carter, Secretary, Chicago.

COUNCIL ON FOODS AND NUTRITION (Standing Committee of Board of Trustees)—Irvine McQuarrie, Minneapolis, 1945; Morris Fishbein, Chicago, 1945; R. M. Wilder, Rochester, Minn., 1946; Howard B. Lewis, Ann Arbor, Mich., 1946; J. S. McLester, Chairman, Birmingham, Ala., 1946; Philip C. Jeans, Iowa City, 1947; C. A. Elvehjem, Madison, Wis., 1947; Lydia J. Roberts, Chicago, 1948; George R. Cowgill, New Haven, Conn., 1948; C. S. Ladd, Washington, D. C., 1949; John B. Youmans, Nashville, Tenn., 1949; George K. Anderson, Secretary, Chicago.

COUNCIL ON INDUSTRIAL HEALTH (Standing Committee of Board of Trustees)—Leroy U. Gardner, Saranac Lake, N. Y., 1945; A. J. Lanza, New York, 1945; C. D. Selby, Detroit, 1945; Warren F. Draper, Washington, D. C., 1946; Raymond Hussey, Baltimore, 1946; Henry H. Kessler, Newark, N. J., 1946; L. D. Bristol, New York, 1947; Philip Drinker, Boston, 1947; Stanley J. Seeger, Chairman, Texarkana, Texas, 1947; Harvey Bartle, Philadelphia, 1948; W. A. Sawyer, Rochester, N. Y., 1948; James S. Simmons, Washington, D. C., 1948; C. M. Peterson, Secretary, Chicago.

COMMITTEE ON SCIENTIFIC EXHIBIT—E. L. Henderson, Chairman, Louisville, Ky.; Ralph A. Fenton, Portland, Ore.; C. W. Roberts, Atlanta, Ga.; Thomas G. Hull, Director, Chicago. Advisory Committee—George Blumer, San Marino, Calif.; Paul J. Hanzlik, San Francisco; Ludvig Hektoen, Chicago; Urban Maes, New Orleans; Eben J. Carey, Milwaukee; James P. Leake, Washington, D. C.

BUREAU OF LEGAL MEDICINE AND LEGISLATION—J. W. Holloway Jr., Director, Chicago.

BUREAU OF HEALTH EDUCATION—W. W. Bauer, Director, Chicago.

BUREAU OF INVESTIGATION—Paul C. Barton, Director, Chicago.

BUREAU OF MEDICAL ECONOMICS—R. G. Leland, Director, Chicago.

LABORATORY—Albert E. Sidwell Jr., Director, Chicago.

LIBRARY—Marjorie Hutchins Moore, Librarian, Chicago.

CHICAGO

An important feature of the coming session—the first to be held in Chicago since 1924—is the opportunity to visit the headquarters office of the Association, now occupying a thoroughly remodeled nine story building. Visitors to the building will find about 500 employees in the various departments, bureaus and councils, a number which is more than 150 below maximum peacetime figures. This is a unique opportunity for many Fellows to become familiar with the wide range of activities at the headquarters office and with the numerous services offered.

Headquarters office of the American Medical Association, 535 North Dearborn Street, corner of Grand Avenue.

MEDICAL SCHOOLS AND HOSPITALS

There are four class A medical schools in Chicago—Northwestern University Medical School, the University of Illinois College of Medicine, with which Rush Medical College has become consolidated, the University of Chicago and Loyola University School of Medicine. Chicago has a large number of famous hospitals, including the enormous Cook County hospital, which will be available for clinics and visiting. Plans for the development of a large medical center on the west side of Chicago, in which several medical schools and hospitals will take part, are well under way. In this area also is the Hektoen Institute for Medical Research, established in 1943, occupying the space of the former John McCormick Institute for Infectious Diseases.

HOTELS AND MEETING PLACES

In ordinary times the hotel facilities of Chicago are paralleled by few other cities of the world. Today some hotels are not available for civilian occupancy, and all of them are unusually crowded. Nevertheless they should be sufficient for convention needs. One, the Stevens, will house several scientific sections and the Technical Exhibits. The House of Delegates will meet at the Palmer House, which will also contain the great Scientific Exhibits. The big war meeting of the Association will be held Wednesday evening at the Medinah Temple.

THE CITY

The visitor to the annual session will have available many Chicago features of great cultural interest. They include the Art Institute, containing some of the great artistic works of all time, the Chicago Museum of Natural History (formerly the Field Museum), a great planetarium, aquariums and the Rosenwald Museum of Science and Industry in Jackson Park. The latter institution has a complete coal mine and many other scientific and industrial exhibits of extraordinary interest and importance. The great packing plants of Chicago and the stockyards, which formerly attracted many, are closed to visitors at present. In spite of the war the number of cultural and medical features of interest in Chicago is ample to provide for the needs and desires of all visitors.

TRANSPORTATION

As is generally known throughout the country, transportation facilities are taxed to the limit at all times. It is suggested, therefore, that all those who desire to attend the annual session of the American Medical Association consult at the earliest possible time with the ticket agents at their home towns so that railroad and pullman accommodations may be secured.

HEADQUARTERS OF THE AMERICAN MEDICAL ASSOCIATION

Members are cordially invited to visit the headquarters of the American Medical Association, 535 North Dearborn Street, corner of Dearborn Street and Grand Avenue, at any time during the annual session, June 12 to 16, from 8:30 a. m. to 5 p. m.

HOW TO REACH THE HEADQUARTERS OF THE AMERICAN MEDICAL ASSOCIATION

For physicians staying at hotels in the Loop, access to the headquarters of the Association is easy by bus, subway or streetcar. Via bus, board a north bound bus on Michigan Boulevard, ride to Grand Avenue and walk four blocks west. Via subway, enter any subway station on State Street, ride north to Grand Avenue and on leaving the subway walk one block west. Via streetcar, board any streetcar on State Street north bound, except one marked "State and Lake," ride to Grand Avenue and walk one block west, or board any streetcar on Clark Street north bound to Grand Avenue and walk one block east.

For physicians stopping at hotels on the north side of the city, the headquarters may be reached as follows: Via bus, take a south bound bus to Grand Avenue and walk four blocks west; via subway, ride south to Grand Avenue and on leaving subway walk one block west; via streetcar, board State Street car south bound to Grand Avenue and then walk one block west, or board Clark Street car south bound to Grand Avenue and walk one block east.

ACTIVITIES OF ASSOCIATION

The American Medical Association Building is a nine story stone structure housing all activities of the Association, including its printing plant. For the benefit of visiting members, there is available a staff of guides familiar with the functions of the Association. In addition to the printing plant, including a press room, composing room, mailing room and bindery, which occupy the first three floors and basement, the departments are as follows:

Fourth Floor: Bureau of Medical Economics; Bureau of Legal Medicine and Legislation; Bureau of Scientific Exhibits; Council on Medical Service and Public Relations; Council on Industrial Health; HYGEIA Editorial Office, and Consultant Office of Procurement and Assignment Service.

Fifth Floor: Council on Pharmacy and Chemistry; Council on Physical Therapy; Council on Foods and Nutrition; Chemical Laboratory; Bureau of Health Education and Bureau of Investigation.

Sixth Floor: Council on Medical Education and Hospitals; Directory Department, including a biographic index of physicians, and HYGEIA Circulation Department.

Seventh Floor: Office of the Secretary and General Manager; Office of the Business Manager; Advertising Department; Accounting Department; Eellowship, Membership and Subscription Department, and Cooperative Medical Advertising Bureau.

Eighth Floor: Office of the Editor; Editorial Department, including News Department, Foreign Abstracting Department and Manuscript Editing Department, and Library.

Ninth Floor: Assembly Room and Board of Trustees Room.

Too limited a number of Fellows of the American Medical Association are aware of the facilities available at the headquarters of the Association for carrying on its work, including the physical equipment for the printing of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; the special journals, namely AMERICAN JOURNAL OF DISEASES OF CHILDREN, ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY, ARCHIVES OF INTERNAL MEDICINE, ARCHIVES OF NEUROLOGY AND PSYCHIATRY, ARCHIVES OF OPHTHALMOLOGY, ARCHIVES OF OTOLARYNGOLOGY, ARCHIVES OF PATHOLOGY, ARCHIVES OF SURGERY and WAR MEDICINE; HYGEIA; American Medical Directory; QUARTERLY CUMULATIVE INDEX MEDICUS, and by-products of THE JOURNAL and of the Press of the American Medical Association.

While it is realized that those who attend the annual session of the American Medical Association will be pretty well occupied, it is hoped that each of them will find at least one hour during the week for visiting the Headquarters of the American Medical Association to see for himself something of the work that is being done there.

REGISTRATION

The Bureau of Registration will be located in the lower level at the Hotel Stevens, Michigan Boulevard at Balbo Drive. A branch postoffice in charge of government postoffice officials will be available for visitors, and an information bureau will be operated in connection with the Bureau of Registration.

Who May Register

Only Fellows, Affiliate, Associate and Honorary Fellows and Invited Guests may register and take part in the work of the sections. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL and paid their Fellowship dues for the current year. Fellowship dues and subscription to THE JOURNAL are included in the one annual payment of $8, which is the regular subscription price of THE JOURNAL. Fellowship cards are sent to all Fellows after payment of annual dues, and these cards should be presented at the registration window. Any who have not received cards for 1944 should secure them at once by writing to the American Medical Association, 535 North Dearborn Street, Chicago 10.

Members in Good Standing Eligible to Apply for Fellowship in the Association

Members in good standing in the American Medical Association are those members of component county medical societies and of constituent state and territorial medical associations whose names are officially reported for enrolment to the Secretary of the American Medical Association by the secretaries of the constituent medical associations. All members in good standing may apply for Fellowship in the Scientific Assembly and are urged to qualify as Fellows before leaving home in order that pocket cards may be secured and brought to Chicago so that registration can be more easily and more promptly effected.

Application forms may be had on request.

Those subscribers to THE JOURNAL who have not received pocket cards for 1944 should write to the American Medical Association in order to obtain application blanks and information as to further requirements.

Register Early

Fellows living in Chicago, as well as all other Fellows who are in Chicago on Monday and Tuesday, should register as early as possible.

The names and local addresses of those who register will be included in the issue of the *Daily Bulletin* appearing the next day, and this will enable visiting physicians to find friends who have registered.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau.

Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card and sign the application on the back. These cards will be found on the tables.

Entries on the registration card should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*, which appears on Tuesday, Wednesday, Thursday and Friday mornings during the week of the session.

Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out *white* registration card, together with the pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it and supply the Fellow with a badge, a copy of the official program and other printed matter of interest to those attending the annual session.

As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago 10, so that their Fellowship may be entered not later than May 15. Any applications that are received later than May 15 will be given

prompt attention, but the Fellowship pocket card may not reach the applicant in time for him to register at the Chicago session.

It will be possible for members of the organization to qualify as Fellows at Chicago. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and to sign the formal application that is printed on the reverse side of the card. It is suggested that those members who apply for Fellowship at Chicago bring with them their state membership cards for the year 1944. The state membership card should be presented along with the filled in *blue* registration card at the window in the booth marked "Applicants for Fellowship and Invited Guests."

As already stated, registration can be effected more easily and more promptly if members will qualify as Fellows before leaving home.

Registration for General Officers and Delegates at the Palmer House

General Officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly outside the foyer of the Red Lacquer Room of the Palmer House. This arrangement is made for the convenience of the members of the House of Delegates, which will convene on Monday morning at 10 o'clock in the Red Lacquer Room of the Palmer House. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Registration of delegates for the Scientific Assembly will begin at 8 o'clock Monday morning, June 12, and delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.

CHICAGO HOTELS AND MAP

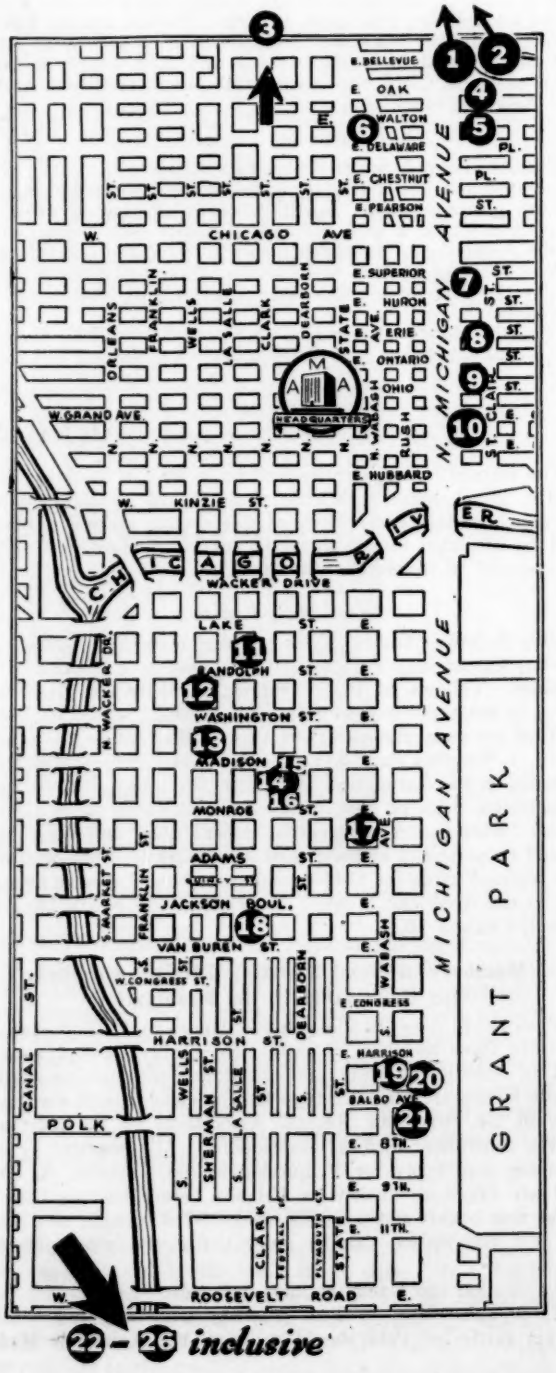
A list of Chicago hotels is presented for the benefit of those who expect to attend the annual session of the American Medical Association, June 12-16. Dr. Fred M. Muller is chairman of the Subcommittee on Hotels and may be addressed at 1 North La Salle Street, 23d Floor, Chicago 2, Ill. The advertising announcement and a coupon to be used for making reservations appear on advertising page 106 of this issue.

Since reservations are cleared through the subcommittee on hotels, it will greatly expedite matters if requests for reservations are addressed directly to Dr. Muller.

Schedule of Rates

Number on Map	Hotels	With Bath: Single	With Bath: Double	With Bath: Suites
7	Allerton * 701 N. Michigan Blvd.	$2.75	$4.75	$8.00
18	Atlantic * 316 S. Clark St.	2.75- 3.30	3.75- 6.00	
12	Bismarck 171 West Randolph St.	3.75- 7.50	5.25-10.50	12.00 & up
20	Blackstone † S. Michigan Blvd. & E. Balbo Drive	4.00 & up	7.50-10.00	10.00 & up
15	Chicagoan 67 W. Madison St.	3.30- 4.40	5.95- 6.60	
4	Drake † E. Lake Shore & N. Michigan Blvd.	4.00-10.00	7.00-12.00	12.00 & up
8	Eastgate † 162 E. Ontario St.	3.30 & up	5.00 & up	
23	Flamingo 5520 S. South Shore	2.50- 3.50	4.00- 6.00	
16	Hamilton † 20 S. Dearborn St.	3.00- 6.00	5.00- 8.00	9.00-15.00
19	Harrison 65 E. Harrison St.	3.00	4.00- 5.00	
13	LaSalle † LaSalle & W. Madison Sts.	3.30- 5.50	4.40- 7.70	5.50-20.00
6	Maryland 900 N. Rush St.	3.00	5.00	10.00 & up
10	Medinah Club 505 N. Michigan Blvd.	3.50 & up	5.00 & up	8.00 & up
14	Morrison 79 West Madison St.	3.30- 5.50	4.95- 8.80	8.80-13.20
25	Norwood 6400 S. Normal Ave.	2.00- 3.00	2.50- 3.00	
17	Palmer House † State and Monroe Sts.	3.85- 8.80	5.50-12.10	13.20 & up
3	Plaza 1553 N. Clark St.	2.00 & up	3.00 & up	5.00 & up
9	St. Clair 162 E. Ohio St.	3.50	5.00- 6.00	
2	Sheridan Plaza 4607 N. Sheridan Road	2.00- 3.00	3.00- 5.00	7.00- 8.00
11	Sherman N. Clark & W. Randolph Sts.	3.30- 5.50	4.95- 8.80	8.80-22.00
22	Shoreland 5454 S. South Shore	5.00- 6.00	7.00- 8.00	14.00-15.00
26	Southmoor 6646 S. Stony Island Ave.	2.50- 3.00	4.00- 4.50	6.00- 7.00
1	Sovereign 6200 N. Kenmore Ave.	3.50	4.50- 5.00	
21	Stevens † Michigan Blvd. at Balbo Drive	3.50- 5.00	5.00-10.00	12.00 & up
24	Windermere 1642 E. 56th St.	4.00 & up	6.00 & up	8.00 & up

* Rooms without bath at lower rates.
† Booked to capacity.



MEETING PLACES

HOUSE OF DELEGATES: Red Lacquer Room, Fourth Floor, Palmer House, State and Monroe streets.

OPENING GENERAL MEETING: Grand Ballroom, Fourth Floor, Palmer House, State and Monroe streets.

GENERAL SCIENTIFIC MEETINGS: Grand Ballroom, Fourth Floor, Palmer House, State and Monroe streets.

SCIENTIFIC EXHIBIT: Exhibition Hall, Palmer House, State and Monroe streets.

GENERAL HEADQUARTERS, REGISTRATION BUREAU, TECHNICAL EXHIBITS, INFORMATION BUREAU AND BRANCH POSTOFFICE: Lower Level and Ballroom, Hotel Stevens, Michigan Boulevard and Balbo Drive.

SECTIONS OF SCIENTIFIC ASSEMBLY

PRACTICE OF MEDICINE: Grand Ballroom, Fourth Floor, Palmer House, State and Monroe streets.

SURGERY, GENERAL AND ABDOMINAL: Grand Ballroom, Hotel Sherman, North Clark and West Randolph streets.

OBSTETRICS AND GYNECOLOGY: Grand Ballroom, Hotel Sherman, North Clark and West Randolph streets.

OPHTHALMOLOGY: Bal Tabarin Room, Hotel Sherman, North Clark and West Randolph streets.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Bal Tabarin Room, Hotel Sherman, North Clark and West Randolph streets.

PEDIATRICS: Grand Ballroom, Fourth Floor, Palmer House, State and Monroe streets.

EXPERIMENTAL MEDICINE AND THERAPEUTICS: Tower Room, Upper Level, Hotel Stevens, Michigan Boulevard and Balbo Drive.

PATHOLOGY AND PHYSIOLOGY: Tower Room, Upper Level, Hotel Stevens, Michigan Boulevard and Balbo Drive.

NERVOUS AND MENTAL DISEASES: Louis XVI and Crystal Rooms, Hotel Sherman, North Clark and West Randolph streets.

DERMATOLOGY AND SYPHILOLOGY: Tower Room, Lower Level, Hotel Stevens, Michigan Boulevard and Balbo Drive.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH: South Ballroom, Hotel Stevens, Michigan Boulevard and Balbo Drive.

UROLOGY: Tower Room, Lower Level, Hotel Stevens, Michigan Boulevard and Balbo Drive.

ORTHOPEDIC SURGERY: Louis XVI and Crystal Rooms, Hotel Sherman, North Clark and West Randolph streets.

Medinah Temple, where the War Meeting will be held.

GASTRO-ENTEROLOGY AND PROCTOLOGY: South Ballroom, Hotel Stevens, Michigan Boulevard and Balbo Drive.

RADIOLOGY: North Ballroom, Hotel Stevens, Michigan Boulevard and Balbo Drive.

ANESTHESIOLOGY: North Ballroom, Hotel Stevens, Michigan Boulevard and Balbo Drive.

MISCELLANEOUS TOPICS; SESSIONS FOR THE GENERAL PRACTITIONER: Mural Room, Hotel Morrison, 79 West Madison Street.

WAR MEETING

On the evening of Wednesday, June 14, a War Meeting will be held at the Medinah Temple, northwest corner of Ohio Street and Wabash Avenue. Addresses will be delivered by important officials immediately concerned with the prosecution of the war. The program for this meeting is in preparation and will be announced at the earliest possible time.

ENTERTAINMENT

Dinner for Delegates

A dinner is being arranged for Monday, June 12, for members of the House of Delegates and officers of the American Medical Association. Complete information concerning the dinner will be available at the first meeting of the House of Delegates on Monday morning, June 12.

Luncheon for Delegates

A luncheon for the members of the House of Delegates and the officers of the American Medical Association is being planned for Tuesday noon, June 13, between the morning and afternoon sessions of the House of Delegates at the Palmer House.

Opening General Meeting

The Opening General Meeting will be held on Tuesday evening, June 13, in the Grand Ballroom, Palmer House. The program will begin at 8 o'clock.

Luncheons and Dinners

ALPHA KAPPA KAPPA, Luncheon in honor of Dr. Herman L. Kretschmer, Wednesday, June 14.

ALPHA OMEGA ALPHA, Dinner, Thursday, June 15, 7 p. m., at Palmer House.

HARVARD MEDICAL ALUMNI ASSOCIATION, Dinner Meeting, Wednesday, June 14, 6 p. m., University Club. Tickets sold at Registration Booth, Stevens Hotel.

LOYOLA UNIVERSITY MEDICAL ALUMNI ASSOCIATION, Luncheon, Wednesday, June 14, noon, Crystal Room of Palmer House. Dr. Herbert E. Schmitz will be luncheon chairman. There will be a report from the Secretary followed by an election of officers.

RADIO PROGRAM

The Bureau of Health Education has attempted to arrange radio broadcasts during the meeting as usual. This will be announced in THE JOURNAL when arrangements have been made for network time and for speakers. Radio time is at a premium owing to war conditions, but some broadcasts will probably be made. Important material prepared for broadcasts but not placed on radio stations will be recorded for local broadcasting subsequent to the session.

WOMAN'S AUXILIARY

MRS. ROY M. HUTCHISON, Chairman of the Chicago Committee

A most cordial invitation is extended to all Auxiliary members and the wives and guests of physicians present at the American Medical Association meeting to participate in the social functions and attend the sessions of the twenty-second annual meeting of the Woman's Auxiliary to the American Medical Association. Headquarters will be in the Towne Room of the Hotel Knickerbocker, 163 East Walton Place, where all meetings will be held. Please register early and obtain your badge and program. Tickets may be purchased at the registration desk. All meetings will convene at the time scheduled. Please be prompt.

REGISTRATION—FOYER BALL ROOM (LOBBY FLOOR)

Sunday, 2 to 4 p. m.; Monday, 8:30 a. m. to 4 p. m.; Tuesday, 8:30 a. m. to 4 p. m.; Wednesday, 8:30 a. m. to 4 p. m.

Preconvention Meetings

SATURDAY, JUNE 10

7 p. m. Finance Committee Meeting, Rose Room (second floor); chairman, Mrs. G. E. McDonnel.

SUNDAY, JUNE 11

3 p. m. Nominating Committee Meeting, Rose Room; chairman, Mrs. Roscoe E. Mosiman.

7 p. m. Revisions Committee Meeting, Rose Room; chairman, Mrs. Roscoe E. Mosiman.

MONDAY, JUNE 12

10 a. m. Meeting of the Board of Directors, Committee Room (fourteenth floor): presiding, Mrs. Eben J. Carey.

12:30 p. m. Luncheon, Board of Directors (fourteenth floor).

2:30 p. m. Afternoon Session of Meeting of Board of Directors, Committee Room (fourteenth floor).

General Meeting

TUESDAY, JUNE 13

10 a. m. Opening Meeting. Towne Room (fourteenth floor): Presiding. Mrs. Eben J. Carey, President.

Invocation. Reverend Joseph M. Eagen, S.J., President, Loyola University, Chicago.

Pledge of Allegiance to the Flag. Lieut. Viola Cawood Flowers, Woman's Army Corps.

Pledge of Loyalty to the Woman's Auxiliary to the American Medical Association. Mrs. Frank N. Haggard.

Greetings. Hon. Edward J. Kelly, Mayor of Chicago.

Address of Welcome. Mrs. M. A. Nix, past president, Woman's Auxiliary to the Illinois State Medical Society.

Response. Mrs. Asher Yaguda, past president, Woman's Auxiliary to the Medical Society of New Jersey.

In Memoriam. Mrs. M. B. Van Cleave.

Introduction of Mrs. Roy M. Hutchison, Chairman of the Chicago Committee.

Presentation of the President-Elect, Mrs. David W. Thomas.

Minutes of the Twenty-First Annual Meeting. Mrs. David Berg, Recording Secretary.

Roll Call. Mrs. David Berg.

Convention Rules of Order.

Credentials and Registration, Mrs. Carlton E. Wertz, chairman.

President's Message, Mrs. Eben J. Carey.

Reports of Officers:

Recording Secretary, Mrs. David Berg.

Corresponding Secretary, Mrs. Charles Fidler.

Treasurer, Mrs. Harold F. Wahlquist.

Auditor. To be read by the Recording Secretary.

Parliamentarian, Mrs. Clarence G. Goodwin.

12:30 p. m. Luncheon in honor of Mrs. Eben J. Carey, President Ball Room (lobby floor). Tickets $2. Guest speaker: Vice Admiral Ross T. McIntire, Surgeon General, U. S. Navy.

2:30 p. m. Afternoon Session: Reports of Directors: Mrs. Frank N. Haggard, Mrs. Frank L. Davis, Mrs. William J. Butler, Mrs. David B. Allman, Mrs. James P. Simonds, Mrs. W. W. King, Mrs. Jesse D. Hamer. Reports of Chairmen of Standing and Special Committees: Finance, Mrs. G. E. McDonnel; Hygeia, Mrs. Arthur I. Edison; Legislation, Mrs. Luther H. Kice; Organization, Mrs. Eustace A. Allen; Press and Publicity, Mrs. William H. Goodson; Program, Mrs. Oscar W. Friske; Public Relations, Mrs. Frank P. Dwyer; Revisions, Mrs. Roscoe E. Mosiman; War Participation, Mrs. Rollo K. Packard; Central Office, Mrs. James P. Simonds. Report of Historian, Mrs. David B. Ludwig. Report of Bulletin Circulation, Miss Margaret Wolfe.

5 p. m. Tea honoring Mrs. Eben J. Carey, president, and Mrs. David W. Thomas, president-elect, for the members of the National Board of Directors and State Delegates. Hostess: Woman's Auxiliary to the Chicago Medical Society. Hotel Knickerbocker, Ballroom.

8. p. m. Palmer House, Grand Ballroom. Opening General Meeting of the House of Delegates of the American Medical Association. Members of the Woman's Auxiliary and guests are welcome.

WEDNESDAY, JUNE 14

10 a. m. General Session of the House of Delegates of the Woman's Auxiliary to the American Medical Association. Towne Room (fourteenth floor). Presiding, Mrs. Eben J. Carey, president; minutes, Mrs. David Berg; announcements, Mrs. Roy M. Hutchison; credentials and registration, Mrs. Carlton E. Wertz; resolutions, Mrs. Arthur B. McGlothlan; reports of state presidents.

12:30 p. m. Luncheon in honor of the past presidents of the Woman's Auxiliary to the American Medical Association, Ball Room (lobby floor). Tickets $2. Guest speaker and guests of honor, Dr. Herman L. Kretschmer, President-Elect, American Medical Association; Dr. James E. Paullin, President, American Medical Association; Dr. Morris Fishbein, Editor of THE JOURNAL and HYGEIA.

2:30 p. m. Afternoon Session: Report of Nominating Committee, Mrs. Roscoe E. Mosiman; election of officers; installation of officers and presentation of president's pin, Mrs. Augustus S. Kech; inaugural address, Mrs. David W. Thomas; minutes, Mrs. David Berg.

5 p. m. Museum of Science and Industry (58th Street and the Lake). Tour of exhibits and buffet supper (tickets can be secured at registration desk).

THURSDAY, JUNE 15

10 a. m. Executive Committee meeting, Committee Room (fourteenth floor): presiding, Mrs. David W. Thomas.

10:30 a. m. Meeting of Board of Directors, committee room (fourteenth floor): presiding, Mrs. David W. Thomas.

Chicago Committee

MRS. ROY M. HUTCHISON, Chairman

MRS ALFRED F. GAREISS
MRS. M. RAY HADDON
MRS. THEODORE JOHNSTON
MRS. CLYDE R. LANDIS
MRS. G. HENRY MUNDT
MRS. M. A. NIX
MRS. ROLLO K. PACKARD
MRS. WILLIAM RAIM
MRS. CALVIN SHORT
MRS. FREDERICK TICE

GOLF TOURNAMENT

The American Medical Golfing Association will hold its twenty-ninth annual tournament at Flossmoor Country Club, Chicago, on Monday, June 12.

TROPHIES AND PRIZES

Thirty-six holes of golf will be played in competition for the eight major trophies and many prizes in the eight events.

Trophies will be awarded for the Association Championship, the Will Walter Trophy; the Association Handicap Championship, the Detroit Trophy; Championship Flight, First Gross, the St. Louis Trophy; Championship Flight, First Net, the President's Trophy; Eighteen Hole Championship, the Golden State Trophy; Eighteen Hole Handicap Championship, the Ben Thomas Trophy and the Atlantic City Trophy; Maturity Event, the Minneapolis Trophy, and the Oldguard Championship, the Wendell Phillips Trophy.

CHAMPIONSHIP COURSE

Flossmoor Country Club is one of the finest golf courses in America. It can be reached more readily than any other golf club in the Chicago district by taking the Illinois Central to one-quarter mile from the club; trains will be met by automobiles to take golfers direct to the club.

COMMITTEES ON ARRANGEMENTS

Owing to the death last September of Dr. John B. Morgan, president of the A. M. G. A., as well as to the fact that Dr. Waltman Walters, first vice president, is with the Navy in the South Pacific, Dr. Harry E. Mock, Chicago, the immediate past president of the Association, with the aid of all living past presidents, has formed a committee of direction for this year's tournament.

The Chicago Committee on Arrangements is under the chairmanship of Dr. Charles E. Shannon, 104 South Michigan Avenue, Chicago, assisted by Drs. John M. Dorsey, Eugene A. Edwards, Johnson F. Hammond, Robert J. Hawkins, Carl Ireneus Jr. and LeRoy H. Sloan.

APPLICATION FOR MEMBERSHIP

All male Fellows of the American Medical Association are cordially invited to become members of the American Medical Golfing Association. Write Executive Secretary Bill Burns, 2020 Olds Tower, Lansing 8, Mich., for application blank. Participants in the tournament are required to present their home club handicap, signed by the club secretary, or to accept a handicap set by the A. M. G. A. handicap committee. No handicap over 30 is allowed. A Fellow absent from the annual dinner, which follows the tournament at Flossmoor, forfeits his rights to a trophy or prize.

Past President Mock anticipates that over one hundred Fellows of the A. M. G. A. will visit Flossmoor June 12 to enjoy a day of much needed relaxation.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

GENERAL SCIENTIFIC MEETINGS

Grand Ballroom, Fourth Floor, Palmer House

MONDAY, JUNE 12—2 to 3:30 P. M.

PANEL DISCUSSION ON TROPICAL MEDICINE

BRIGADIER GENERAL HUGH J. MORGAN, Army of the United States, Moderator

Essayists:

LIEUTENANT COLONEL FRANCIS R. DIEUAIDE, Medical Corps, Army of the United States.

ALBERT V. HARDY, U. S. P. H S.

COMMANDER OMAR J. BROWN (MC), U.S.N.R.

Intermission of ten minutes.

MONDAY, JUNE 12—3:40 TO 5:15 P. M.

PANEL DISCUSSION ON CHEMOTHERAPY

WESLEY W. SPINK, Minneapolis, Moderator

The Therapeutic Indications of the Sulfonamides and Penicillin. FRANCIS G. BLAKE, New Haven, Conn.

The Prophylactic Value of the Sulfonamides. W. BARRY WOOD JR., St. Louis.

Penicillin Therapy.

MAJOR MICHAEL E. DEBAKEY, Medical Corps, Army of the United States.

TUESDAY, JUNE 13—9:30 A. M.

PANEL DISCUSSION ON PLASMA AND BLOOD SUBSTITUTES

CHARLES A. DOAN, Columbus, Ohio, Moderator

Essayists: OWEN H. WANGENSTEEN, Minneapolis.

CAPTAIN L. R. NEWHOUSER (MC), U.S.N.R.

MAX M. STRUMIA, Bryn Mawr, Pa.

ELMER L. DEGOWIN, Iowa City.

TUESDAY, JUNE 13—2:30 P. M.

PANEL DISCUSSION ON NEUROPSYCHIATRY

COLONEL FRANKLIN G. EBAUGH, Medical Corps, Army of the United States, Moderator

Methods of Examination in the Army Air Forces.

LIEUTENANT COLONEL JOHN M. MURRAY, Medical Corps, Army of the United States.

Neurologic Problems.

MAJOR WILLIAM H. EVERTS, Medical Corps, Army of the United States.

Psychomatic Problems. JACK R. EWALT, Galveston, Texas.

Treatment of War Neuroses.

LIEUTENANT COLONEL ROY R. GRINKER, Medical Corps, Army of the United States.

THE OPENING GENERAL MEETING

Grand Ball Room, Palmer House

Tuesday, June 13—8 p. m.

Music.

Call to Order by the President, JAMES E. PAULLIN.

Invocation.

Music.

Introduction and Installation of President-Elect HERMAN L. KRETSCHMER, Chicago.

Address. HERMAN L. KRETSCHMER, President.

Music.

Presentation of Medal to Retiring President, JAMES E. PAULLIN. ROGER I. LEE, Chairman of the Board of Trustees.

Presentation of Distinguished Service Medal, HERMAN L. KRETSCHMER, President.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order that will be followed in the Official Program, nor is the list complete. The Official Program will be similar to the programs issued in previous years and will contain the final program of each section with abstracts of the papers, as well as lists of committees, program of the Opening General Meeting, list of entertainments, map of Chicago and other information. To prevent misunderstandings and protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN GRAND BALLROOM, PALMER HOUSE

OFFICERS OF SECTION

Chairman—BURRELL O. RAULSTON, Los Angeles.
Vice Chairman—CHARLES C. WOLFERTH, Philadelphia.
Secretary—W. D. STROUD, Philadelphia.
Executive Committee—FRED M. SMITH, Iowa City; ROY W. SCOTT, Cleveland; BURRELL O. RAULSTON, Los Angeles.

Wednesday, June 14—9 a. m.

The Effects of Penicillin in the Treatment of Gonorrhea (Lantern Demonstration).

COLONEL THOMAS B. TURNER, Medical Corps, Army of the United States.

Weakness and Fatigue (Lantern Demonstration).
FRANK N. ALLAN, Boston.

The Frank Billings Lecture: Mediastinal Emphysema.
LOUIS HAMMAN, Baltimore.

Epidemic Nausea, Vomiting and Diarrhea (Lantern Demonstration). HOBART A. REIMANN, Philadelphia.

Treatment of Diabetic Coma. HOWARD F. ROOT, Boston.

Thursday, June 15—9 a. m.

Election of Officers

Chairman's Address: Contributions of Chemistry and Physics to the Practice of Medicine (Lantern Demonstration).
BURRELL O. RAULSTON, Los Angeles.

Thrombocytopenic Purpura, with Special Reference to Its Diagnosis by Improved Laboratory Methods.
S. P. LUCIA, San Francisco.

The Health Needs of the Nation as Reflected by the Examination of Thirteen Million Registrants (Lantern Demonstration).
COLONEL LEONARD G. ROWNTREE, Medical Corps, Army of the United States.

Transient Hypertension: Observations Based on Analysis of the Medical Records of 22,700 Officers of the United States Army (Lantern Demonstration).
BRIGADIER GENERAL CHARLES C. HILLMAN, United States Army; ROBERT L. LEVY, New York; WILLIAM D. STROUD, Philadelphia, and PAUL D. WHITE, Boston.

The Results of Radical Sympathectomy in Hypertension (Lantern Demonstration). REGINALD H. SMITHWICK, Boston.

Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet (Lantern Demonstration).
WALTER KEMPNER, Durham, N. C.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

Rheumatic Fever in the Army Air Forces (Lantern Demonstration).
COLONEL W. PAUL HOLBROOK, Medical Corps, Army of the United States.

Postvaccinal Hepatitis Due to Yellow Fever Vaccine (Lantern Demonstration).
COLONEL JULIEN E. BENJAMIN, Medical Corps, Army of the United States.

Infectious Hepatitis (Lantern Demonstration).
JOHN R. PAUL, New Haven, Conn.

SYMPOSIUM FOLLOWED BY PANEL DISCUSSION ON VITAMINS, AMINO ACIDS AND ENZYMES

MORRIS FISHBEIN, Moderator of Panel Discussion

The Amino Acid Requirements of Man (Lantern Demonstration). WILLIAM C. ROSE, Urbana, Ill.

The Rationale for the Use of Vitamins in the Therapy of Shock and Anoxia.
WILLIAM M. GOVIER, Winston-Salem, N. C.

Adult Needs of Vitamins A and C (Lantern Demonstration).
ELMER L. SEVRINGHAUS, Madison, Wis.

The Dilemma of Subclinical Vitamin Deficiencies (Lantern Demonstration). A. J. CARLSON, Chicago.

Vitamins and the Practice of Medicine (Lantern Demonstration). TOM D. SPIES, Birmingham, Ala.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN GRAND BALLROOM, HOTEL SHERMAN

OFFICERS OF SECTION

Chairman—FREDERICK A. COLLER, Ann Arbor, Mich.
Vice Chairman—LESTER R. DRAGSTEDT, Chicago.
Secretary—ALTON OCHSNER, New Orleans.
Executive Committee—LLOYD NOLAND, Fairfield, Ala.; ARTHUR W. ALLEN, Boston; FREDERICK A. COLLER, Ann Arbor, Mich.

Wednesday, June 14—2 p. m.

Alcoholic Injection of the Lumbar Sympathetic Trunk in Cases of Peripheral Vascular Insufficiency When Surgical Sympathectomy Is Contraindicated (Lantern Demonstration). GEORGE D. LILLY, Miami, Fla.
Discussion to be opened by ARTHUR W. ALLEN, Boston.

The Effect of Activity, Rest, Natural Sleep, Sodium Amytal, Pentothal Sodium, Chloralose and Ether on Experimental Neurogenic Hypertension (Lantern Demonstration).
KEITH S. GRIMSON, Durham, N. C.
Discussion to be opened by GEZA DE TAKATS and EMMET B. BAY, Chicago.

The Management of Traumatic Aneurysms and Arteriovenous Fistulas. I. A. BIGGER, Richmond, Va.
Discussion to be opened by JOHN DEJ. PEMBERTON, Rochester, Minn.

The Causalgic State in Peace and War (Lantern Demonstration). GEZA DE TAKATS, Chicago.
Discussion to be opened by WARREN H. COLE, Chicago.

The Preservation of the Sphincters and Intestinal Continuity in Operation for Carcinoma of the Rectal Ampulla (Lantern Demonstration).
OWEN H. WANGENSTEEN, Minneapolis.
Discussion to be opened by ARTHUR W. ALLEN, Boston, and FREDERICK A. COLLER, Ann Arbor, Mich.

An Appraisal of the Results of Surgery in the Treatment of Regional Ileitis (Lantern Demonstration).
JOHN H. GARLOCK and BURRILL B. CROHN, New York.
Discussion to be opened by HENRY W. CAVE, New York, and CLAUDE F. DIXON, Rochester, Minn.

Problems in the Surgical Treatment of Congenital Megacolon.
RAWLEY M. PENICK JR., New Orleans.
Discussion to be opened by J. ARNOLD BARGEN, Rochester, Minn., and REGINALD H. SMITHWICK, Boston.

Thursday, June 15—2 p. m.

Election of Officers

Gallstones: The Time Factor in Relation to the Development of Complications (Lantern Demonstration).
CARL BEARSE, Boston.
Discussion to be opened by I. S. OTIS, Meriden, Conn., and JOHN M. FALLON, Worcester, Mass.

Chairman's Address: Blood Loss During Operation (Lantern Demonstration).
FREDERICK A. COLLER, Ann Arbor, Mich.

Potential Dangers of Nontoxic Nodular Goiter (Lantern Demonstration).
WARREN H. COLE, DANELY P. SLAUGHTER and LEWIS J. ROSSITER, Chicago.
Discussion to be opened by FRANK H. LAHEY, Boston, and GEORGE M. CURTIS, Columbus, Ohio.

The "Suture" of Wounds by Plasma-Thrombin Adhesion (Lantern Demonstration).
FORREST O. J. YOUNG, Rochester, N. Y.
Discussion to be opened by R. T. TIDRICK and E. D. WARNER, Iowa City.

A Report of the Clinical Effects of Surgical and X-Ray Castration in Mammary Cancer.
FRANK E. ADAIR and NORMAN TREVES, New York; LIEUTENANT COMMANDER JOSEPH H. FARROW (MC), U.S.N.R., and ISABELLE M. SCHARNAGEL, New York.
Discussion to be opened by LAWRENCE A. POMEROY, Cleveland, and J. SHELTON HORSLEY, Richmond, Va.

Plasma Cell Mastitis (Lantern Demonstration).
WILLARD H. PARSONS and JOHN C. HENTHORNE, Vicksburg, Miss., and MAJOR R. LEE CLARK JR., Medical Corps, Army of the United States.
Discussion to be opened by WARREN H. COLE, Chicago, and R. L. SANDERS, Memphis, Tenn.

Friday, June 16—2 p. m.

JOINT MEETING WITH SECTION ON GASTROENTEROLOGY AND PROCTOLOGY

Inflammatory Lesions of the Stomach and Duodenum:
Medical Aspects (Lantern Demonstration).
A. H. AARON, Buffalo.

Surgical Aspect. FRANK H. LAHEY, Boston.
Discussion to be opened by ALBERT F. R. ANDRESEN, Brooklyn, and ALTON OCHSNER, New Orleans.

Inflammatory Lesions of the Small Intestine:
Medical Aspect (Lantern Demonstration).
HENRY L. BOCKUS, Philadelphia.

Surgical Aspect. HENRY W. CAVE, New York.
Discussion to be opened by BURRILL B. CROHN, New York, and VERNON C. DAVID, Chicago.

Inflammatory Lesions of the Colon:
Medical Aspect (Lantern Demonstration).
J. ARNOLD BARGEN, Rochester, Minn.
Surgical Aspect (Lantern Demonstration).
THOMAS E. JONES, Cleveland.
Discussion to be opened by DONOVAN C. BROWNE, New Orleans, and RAYMOND W. MCNEALY, Chicago.

SECTION ON OBSTETRICS AND GYNECOLOGY

MEETS IN GRAND BALLROOM, HOTEL SHERMAN

OFFICERS OF SECTION

Chairman—LOUIS E. PHANEUF, Boston.
Vice Chairman—WENDELL M. LONG, Oklahoma City.
Secretary—PHILIP F. WILLIAMS, Philadelphia.
Executive Committee—NORMAN F. MILLER, Ann Arbor, Mich.; WALTER T. DANNREUTHER, New York; LOUIS E. PHANEUF, Boston.

Wednesday, June 14—9 a. m.

The Intrauterine Location of the Placenta and Its Influence on Fetal Presentation (Lantern Demonstration).
RICHARD TORPIN, Augusta, Ga.

Anemia in Pregnancy: A Correlation of the Bone Marrow and Peripheral Blood Findings (Lantern Demonstration).
LOUIS R. LIMARZI and JOHN R. WOLFF, Chicago.

The Overweight Obstetric Patient.
WILLIAM F. MENGERT, Dallas, Texas.

Diabetes in Pregnancy (Lantern Demonstration).
PRISCILLA WHITE, Boston.

Protein Deficiencies in Pregnancy (Lantern Demonstration).
RUPERT E. ARNELL, New Orleans, and DANIEL W. GOLDMAN, Shreveport, La.

Nutrition in Pregnancy (Lantern Demonstration).
CURTIS J. LUND, Minneapolis.

Thursday, June 15—9 a. m.

Election of Officers

The Value of Periodic Pelvic Examination in the Control of Cancer of the Uterus: Report of a Five Year Research (Lantern Demonstration).
CATHARINE MACFARLANE and MARGARET C. STURGIS, Philadelphia.

The Role of Injudicious Hormonal Therapy in the Delayed Diagnosis of Uterine Cancer.
LEWIS C. SCHEFFEY and DAVID M. FARELL, Philadelphia.

Recognition and Management of the Patient Predisposed to Adenocarcinoma of the Uterus (Lantern Demonstration).
CLYDE L. RANDALL, Buffalo.

Evaluation of Radiation in the Treatment of Carcinoma of the Corpus (Lantern Demonstration).
JAMES A. CORSCADEN, New York.

The Treatment of Uterine Prolapse and Allied Conditions (Lantern Demonstration). RICHARD W. TELINDE, Baltimore.

Chairman's Address: The Progress of Gynecology During the Last Quarter of a Century.
LOUIS E. PHANEUF, Boston.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON UROLOGY

Pyelitis in Pregnancy (Lantern Demonstration).
E. GRANVILLE CRABTREE, Boston.

Influence of Gynecologic Pathology on Urinary Tract Diseases (Lantern Demonstration).
J. M. HUNDLEY JR., Baltimore.

Problems of Diagnosis of Infertility in the Female (Lantern Demonstration). GEORGE H. GARDNER, Chicago.

Dysurias in the Female.
HERMAN L. KRETSCHMER and NOBLE SPROAT HEANEY, Chicago.

The Female Urethra (Lantern Demonstration).
A. I. FOLSOM, Dallas, Texas.
Discussion to be opened by REED M. NESBIT, Ann Arbor, Mich., and VINCENT J. O'CONOR, Chicago.

SECTION ON OPHTHALMOLOGY

MEETS IN BAL TABARIN ROOM, HOTEL SHERMAN

OFFICERS OF SECTION

Chairman—CONRAD BERENS, New York.
Vice Chairman—ROBERT VON DER HEYDT, Chicago.
Secretary—R. J. MASTERS, Indianapolis.
Executive Committee—ALBERT C. SNELL, Rochester, N. Y.; LAWRENCE T. POST, St. Louis; CONRAD BERENS, New York.

Wednesday, June 14—2 p. m.

Chairman's Address. CONRAD BERENS, New York.
Address of Guest of Honor (Lantern Demonstration).
WILLIAM L. BENEDICT, Rochester, Minn.

Progress Report on the Treatment of Bilateral Retinoblastoma by Surgery and Irradiation with the Purpose of Conserving Vision in One Eye (Lantern Demonstration).
HAYES MARTIN and ALGERNON B. REESE, New York.

Neuroparalytic Keratitis (Ocular Complications Following Operations for Trigeminal Neuralgia) (Lantern Demonstration). C. L. PANNABECKER, Ann Arbor, Mich.

Meridional Aniseikonia at Oblique Axes (Lantern Demonstration).
HERMANN M. BURIAN and KENNETH N. OGLE, Hanover, N. H.

Thursday, June 15—2 p. m.

Election of Officers

In Search of Gonioscopic Correlates of Responsiveness to Miotics in Glaucoma (Lantern Demonstration).
PETER C. KRONFELD, Chicago.

Choice of Operation in Glaucoma (Lantern Demonstration).
PAUL A. CHANDLER, Boston.

Dibutoline: A New Mydriatic and Cycloplegic Drug (Lantern Demonstration). KENNETH C. SWAN, Iowa City.

The Management of Traumatic Hyphemia (Lantern Demonstration). RALPH O. RYCHENER, Memphis, Tenn.

Nonmagnetic Intraocular Foreign Bodies (Lantern Demonstration). HARVEY E. THORPE, Pittsburgh.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

SYMPOSIUM ON THE TREATMENT OF CHRONIC DACRYOCYSTITIS

Discussion of Dacryocystitis from the Point of View of the Ophthalmologist (Lantern and Motion Picture Demonstration). HAROLD GIFFORD JR., Omaha.

Treatment of Chronic Dacryocystitis from the Point of View of the Rhinologist (Lantern Demonstration).
LAVERNE B. SPAKE, Kansas City, Kan.
Discussion to be opened by CHARLES T. PORTER, Boston.

SYMPOSIUM ON THE USE OF PENICILLIN IN THE TREATMENT OF DISEASES OF THE EYE, EAR, NOSE AND THROAT

Use of Penicillin in Diseases of the Eye (Lantern Demonstration).
LIEUTENANT COLONEL JOHN E. L. KEYES, Medical Corps, Army of the United States.

The Use of Penicillin in Diseases of the Ear (Lantern Demonstration).
CAPTAIN C. A. SWANSON (MC), U.S.N., and LIEUTENANT D. C. BAKER (MC), U.S.N.R.

The Use of Penicillin in Diseases of Nose and Throat (Lantern Demonstration).
CAPTAIN F. J. PUTNEY, Medical Corps, Army of the United States.
Discussion to be opened by MAJOR ELMER A. VORISEK, Medical Corps, Army of the United States, and MAJOR WALTER J. AAGESEN, Medical Corps, Army of the United States.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN BAL TABARIN ROOM, HOTEL SHERMAN

OFFICERS OF SECTION

Chairman—CLAUDE C. CODY, Houston, Texas.
Vice Chairman—WILLIAM H. JOHNSTON, Santa Barbara, Calif.
Secretary—LOUIS H. CLERF, Philadelphia.
Executive Committee—LEROY A. SCHALL, Boston; GORDON F. HARKNESS, Davenport, Iowa; CLAUDE C. CODY, Houston, Texas.

Wednesday, June 14—9 a. m.

Malignant Tumors of the Nasal Cavity (Lantern Demonstration).
FRED Z. HAVENS and WILLIAM C. THORNELL, Rochester, Minn.
Discussion to be opened by THOMAS E. CARMODY, Denver, and THOMAS C. GALLOWAY, Evanston, Ill.

The Use and Abuse of Nasal Vasoconstrictors (Lantern Demonstration). BARNEY M. KULLY, Los Angeles.
Discussion to be opened by LAWRENCE R. BOIES, Minneapolis, and O. E. VAN ALYEA, Chicago.

Treatment of Acute Laryngotracheobronchitis. HARRY L. BAUM, Denver.
Discussion to be opened by T. ROY GITTINS, Sioux City, Iowa, and PAUL H. HOLINGER, Chicago.

Nasal Sinus Disease in Children: Its Diagnosis and Treatment (Lantern Demonstration). WILLIAM H. JOHNSTON, Santa Barbara, Calif.
Discussion to be opened by GLENN J. GREENWOOD, Chicago, and JAMES M. ROBB, Detroit.

The Use of Skin Graft in Radical Mastoidectomy (Lantern Demonstration). HORACE J. WILLIAMS, Philadelphia.
Discussion to be opened by JOHN F. DELPH, Chicago, and WILLIAM E. GROVE, Milwaukee.

Thursday, June 15—9 a. m.

Executive Session
Election of Officers

Chairman's Address: Vitamin Therapy in Otolaryngology. CLAUDE C. CODY, Houston, Texas.

Disturbed Vestibular Function: The Causes and Cures (Lantern Demonstration). MARVIN F. JONES, New York.
Discussion to be opened by LYLE M. SELLERS, Dallas, Texas, and GEORGE E. SHAMBAUGH JR., Chicago.

The Importance of Pathology of the Nasopharynx to the Otolaryngologist (Lantern Demonstration). ORAM R. KLINE, Camden, N. J.
Discussion to be opened by C. H. MCCASKEY, Indianapolis, and WALTER H. THEOBALD, Chicago.

The Local Use of Sulfonamides in the Surgical Treatment in Diseases of the Ear. FORREST W. MERICA, Lakewood, Ohio.

Sulfonamides in the Treatment of Nasal Sinus Disease. EDWARD J. WHALEN, Hartford, Conn.
Discussion on papers of DR. MERICA and DR. WHALEN to be opened by RALPH A. FENTON, Portland, Ore., and J. R. LINDSAY, Chicago.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON OPHTHALMOLOGY

SYMPOSIUM ON THE TREATMENT OF CHRONIC DACRYOCYSTITIS

Discussion of Dacryocystitis from the Point of View of the Ophthalmologist (Lantern and Motion Picture Demonstration). HAROLD GIFFORD JR., Omaha.

Treatment of Chronic Dacryocystitis from the Point of View of the Rhinologist (Lantern Demonstration). LAVERNE B. SPAKE, Kansas City, Kan.
Discussion to be opened by CHARLES T. PORTER, Boston.

SYMPOSIUM ON THE USE OF PENICILLIN IN THE TREATMENT OF DISEASES OF THE EYE, EAR, NOSE AND THROAT

Use of Penicillin in Diseases of the Eye (Lantern Demonstration).
LIEUTENANT COLONEL JOHN E. L. KEYES, Medical Corps, Army of the United States.

The Use of Penicillin in Diseases of the Ear (Lantern Demonstration).
CAPTAIN C. A. SWANSON (MC), U.S.N., and LIEUTENANT D. C. BAKER (MC), U.S.N.R.

The Use of Penicillin in Diseases of Nose and Throat (Lantern Demonstration).
CAPTAIN F. J. PUTNEY, Medical Corps, Army of the United States.
Discussion to be opened by MAJOR ELMER A. VORISEK, Medical Corps, Army of the United States, and MAJOR WALTER J. AAGESEN, Medical Corps, Army of the United States.

SECTION ON PEDIATRICS

MEETS IN GRAND BALLROOM, PALMER HOUSE

OFFICERS OF SECTION

Chairman—HUGH L. DWYER, Kansas City, Mo.
Vice Chairman—FRANCIS S. SMYTH, San Francisco.
Secretary—GILBERT J. LEVY, Memphis, Tenn.
Executive Committee—JULIUS H. HESS, Chicago; PHILIP M. STIMSON, New York; HUGH L. DWYER, Kansas City, Mo.

Wednesday, June 14—2 p. m.

The Early Immunization Against Pertussis (Lantern Demonstration).
WALLACE S. SAKO and W. L. TREUTING, New Orleans; MAJOR DAVID B. WITT, Medical Corps, Army of the United States, and MAJOR S. J. NICHAMIN, Medical Corps, Army of the United States.
Discussion to be opened by LOUIS W. SAUER, Evanston, Ill., and PEARL HENDRICK, Grand Rapids, Mich.

The Preoperative Diagnosis of Patent Ductus Arteriosus (Lantern Demonstration). M. J. SHAPIRO, Minneapolis.
Discussion to be opened by LEO G. RIGLER, Minneapolis.

Precocious Skeletal Development in Children. ROGER L. J. KENNEDY, Rochester, Minn.
Discussion to be opened by A. H. PARMELEE, Oak Park, Ill., and JOHN R. VONACHEN, Peoria, Ill.

Mental Hygiene Aspects of Pediatrics. OSCAR REISS, Los Angeles.
Discussion to be opened by BERT I. BEVERLY, Chicago.

Indications for and Evaluation of Measures Used in the Treatment of Poliomyelitis. J. ALBERT KEY, St. Louis.
Discussion to be opened by MILAND E. KNAPP, Minneapolis, and JOHN A. TOOMEY, Cleveland.

Primary Coccidioidomycosis (Lantern Demonstration).
MAJOR RALPH H. KUNSTADTER, Medical Corps, Army of the United States, and MAJOR ROBERT C. PENDERGRASS, Medical Corps, Army of the United States.
Discussion to be opened by JULIUS H. HESS, Chicago.

Thursday, June 15—2 p. m.

SYMPOSIUM ON ABDOMINAL PAIN IN CHILDREN

Pediatrics. JOSEPH PRENNEMANN, Reading, Vt.
Discussion to be opened by M. G. PETERMAN, Milwaukee.

Allergy (Lantern Demonstration). BRET RATNER, New York.
Discussion to be opened by GEORGE PINESS, Los Angeles.

Urology (Lantern Demonstration). MEREDITH F. CAMPBELL, New York.

Surgery. ALFRED A. STRAUSS, Chicago.
Discussion to be opened by HERBERT E. COE, Seattle.

Ocular Maldevelopment in Extremely Premature Infants (Retrolental Fibroplasia) (Lantern and Motion Picture Demonstration). T. L. TERRY, Boston.

Preparation and Immunizing Properties of Protamine-Toxoid (Diphtheria). VICTOR ROSS, New York.

Friday, June 16—2 p. m.

Election of Officers

SYMPOSIUM ON RHEUMATIC FEVER

Diagnosis of Rheumatic Fever (Lantern Demonstration). T. DUCKETT JONES, Boston.

Recurrence Rates in Rheumatic Fever: The Evaluation of Preventive Therapy (Lantern Demonstration). MAY G. WILSON, New York.

The Prevention of Recurrences in Rheumatic Fever Subjects. CAROLINE BEDELL THOMAS, Baltimore.

The Role of the Cardiac Clinic in the Rheumatic Heart Program. DAVID D. RUTSTEIN, New York.
Experience with Rheumatic Fever in the Armed Forces (Lantern Demonstration).
MAJOR A. C. H. VAN RAVENSWAAY, Medical Corps, Army of the United States.
Discussion to be opened by JOHN R. PAUL, New Haven, Conn.; STANLEY GIBSON, CHICAGO, and COLONEL W. PAUL HOLBROOK, Medical Corps, Army of the United States.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

MEETS IN TOWER ROOM, UPPER LEVEL, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—TINSLEY R. HARRISON, Dallas, Texas.
Vice Chairman—E. V. ALLEN, Rochester, Minn.
Secretary—DWIGHT L. WILBUR, San Francisco.
Executive Committee—C. M. GRUBER, Philadelphia; WALLACE M. YATER, Washington, D. C.; TINSLEY R. HARRISON, Dallas, Texas.

Wednesday, June 14—2 p. m.

The Use of Sulfadiazine as a Prophylactic Against Respiratory Disease (Lantern Demonstration).
CAPTAIN RICHARD G. HODGES, Medical Corps, Army of the United States.
Wound Healing: An Experimental Study of Water Soluble Chlorophyll Derivatives in Conjunction with Various Antibactericidal Agents (Lantern Demonstration).
LAWRENCE W. SMITH, Philadelphia.
Insulin Mixtures in the Treatment of Diabetes: Variable versus Fixed Rations of Insulin and Protamine Zinc Insulin (Lantern Demonstration).
DAVID ADLERSBERG and HENRY DOLGER, New York.
Influence of Neostigmine on Eclamptic Patients and Choline Esterase Activity of Normal and Preeclamptic Human Placentas (Lantern Demonstration).
R. A. WOODBURY, Augusta, Ga., and LIEUTENANT P. H. FRIED, Medical Corps, Army of the United States.
Penicillin in the Treatment of Meningitis (Lantern Demonstration).
LIEUTENANT COMMANDER DAVID H. ROSENBERG (MC), U.S.N.R., and LIEUTENANT P. A. ARLING (MC), U.S.N.R.
Thiouracil in the Treatment of Thyrotoxicosis (Lantern Demonstration). ROBERT H. WILLIAMS, Boston.
A Study of Liver Function in Therapeutic Malaria (Lantern Demonstration).
M. G. FREDRICKS and F. W. HOFFBAUER, Minneapolis.

Thursday, June 15—2 p. m.

Election of Officers

SYMPOSIUM ON THE ABUSE OF REST IN THE TREATMENT OF DISEASE

Chairman's Address: The Abuse of Rest as a Therapeutic Measure in Patients with Cardiovascular Disease (Lantern Demonstration).
TINSLEY R. HARRISON, Dallas, Texas.
The Abuse of Rest as a Means of Treatment in Physical Medicine (Lantern Demonstration).
FRANK H. KRUSEN, Rochester, Minn.
The Abuse of Rest as a Means of Treatment in Obstetrics and Gynecology (Lantern Demonstration).
NICHOLSON J. EASTMAN, Baltimore.
The Evil Sequels of Complete Bed Rest (Lantern Demonstration). WILLIAM DOCK, Los Angeles.
The Abuse of Rest as a Means of Treatment in Orthopedic Surgery (Lantern Demonstration).
RALPH K. GHORMLEY, Rochester, Minn.
The Abuse of Rest as a Means of Treatment in Neuropsychiatry (Motion Picture Demonstration).
KARL A. MENNINGER, Topeka, Kan.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON PRACTICE OF MEDICINE IN GRAND BALLROOM, PALMER HOUSE

Rheumatic Fever in the Army Air Forces (Lantern Demonstration).
COLONEL W. PAUL HOLBROOK, Medical Corps, Army of the United States.
Postvaccinal Hepatitis Due to Yellow Fever Vaccine (Lantern Demonstration).
COLONEL JULIEN E. BENJAMIN, Medical Corps, Army of the United States.
Infectious Hepatitis (Lantern Demonstration).
JOHN R. PAUL, New Haven, Conn.

SYMPOSIUM FOLLOWED BY PANEL DISCUSSION ON VITAMINS, AMINO ACIDS AND ENZYMES

MORRIS FISHBEIN, Moderator of Panel Discussion

The Amino Acid Requirements of Man (Lantern Demonstration). WILLIAM C. ROSE, Urbana, Ill.
The Rationale for the Use of Vitamins in the Therapy of Shock and Anoxia. WILLIAM M. GOVIER, Winston-Salem, N. C.
Adult Needs of Vitamins A and C (Lantern Demonstration).
ELMER L. SEVRINGHAUS, Madison, Wis.
The Dilemma of Subclinical Vitamin Deficiencies (Lantern Demonstration). A. J. CARLSON, Chicago.
Vitamins and the Practice of Medicine (Lantern Demonstration). TOM D. SPIES, Birmingham, Ala.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN TOWER ROOM, UPPER LEVEL, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—FRANK C. MANN, Rochester, Minn.
Vice Chairman—VIRGIL H. MOON, Philadelphia.
Secretary—J. J. MOORE, Chicago.
Executive Committee—CARL J. WIGGERS, Cleveland; J. P. SIMONDS, Chicago; FRANK C. MANN, Rochester, Minn.

Wednesday, June 14—9 a. m.

Traumatic Ischemic Shock, with Observations on Effects of Environmental Temperature.
HAROLD D. GREEN, Cleveland.
Analysis of Traumatic Shock (Lantern Demonstration).
VIRGIL H. MOON, Philadelphia.
Research on Shock (Lantern Demonstration).
JOSEPH C. AUB, Boston.
Pyloric Sphincter Motility and Its Relation to Gastric Evacuation and Other Phenomena (Lantern Demonstration).
J. P. QUIGLEY, Cleveland, and LIEUTENANT D. A. BRODY, Medical Corps, Army of the United States.
Treatment of Experimental Renal Hypertension with Renal Extracts (Lantern Demonstration).
G. E. WAKERLIN, M. L. GOLDBERG and CLARENCE A. JOHNSON, Chicago.
The Influence of Caffeine Containing Beverage on Gastric Secretion and the Peptic Ulcer Problem (Lantern Demonstration). A. C. IVY and A. J. ATKINSON, Chicago.

Thursday, June 15—9 a. m.

Chairman's Address: Hypoglycemia and Restoration with Dextrose. FRANK C. MANN, Rochester, Minn.
The Use of Diasone for the Treatment of Tuberculosis (Lantern Demonstration).
HARRY J. CORPER and MAURICE L. COHN, Denver.
The Diagnosis of Fetal Erythroblastosis (Lantern Demonstration). ISRAEL DAVIDSOHN, Chicago.
Hematologic Findings in Syphilis (Lantern Demonstration).
ROY R. KRACKE, WILLIAM R. PLATT and A. M. OSHLAG, Emory University, Ga.
Sudden Death Due to Intravenous Injection in Mercurial Diuresis (Lantern Demonstration).
ITALO F. VOLINI, Chicago; CAPTAIN ROBERT O. LEVITT, Medical Corps, Army of the United States, and MAJOR RICHARD R. MARTIN, Medical Corps, Army of the United States.
Carcinoma in Young Persons.
ROBERT P. MOREHEAD, Winston-Salem, N. C.
A Clinical and Pathologic Study of a Series of Renal Neoplasms (Lantern Demonstration).
TOBIAS WEINBERG, Baltimore.

Friday, June 16—9 a. m.

Election of Officers

Pathology in the War (Lantern Demonstration).
COLONEL J. E. ASH, Medical Corps, United States Army.

Physiologic Concepts of Virus Infections.
THOMAS FRANCIS JR., Ann Arbor, Mich.

Physiologic Contributions to War Medicine (Lantern and Motion Picture Demonstration).
SURGEON CAPTAIN C. H. BEST, Bytown, Ottawa, Ontario, Canada.

Recent Research in the Pathology of Burns (Lantern Demonstration). HENRY N. HARKINS, Baltimore.

The Toxicity of Boric Acid as Applied to the Treatment of Burns (Lantern Demonstration).
LIEUTENANT CARL C. PFEIFFER, MC-V (S), U.S.N.R.; ENSIGN LOIS F. HALLMAN, W-V (S) (H), U.S.N.R., and LIEUTENANT I. GERSH, H-V (S), U.S.N.R.

Use of Penicillin in the Treatment of Peritonitis: An Experimental Study (Lantern Demonstration).
LIEUTENANT COMMANDER G. B. FAULEY (MC), U.S.N.R.; LIEUTENANT T. L. DUGGAN (H-VS), U.S.N.R., and LIEUTENANT (jg) R. T. STORMONT (MC), U.S.N.R.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN LOUIS XVI AND CRYSTAL ROOMS, HOTEL SHERMAN

OFFICERS OF SECTION

Chairman—J. M. NIELSEN, Los Angeles.
Vice Chairman—THEODORE A. WATTERS, New Orleans.
Secretary—R. P. MACKAY, Chicago.
Executive Committee—TOM B. THROCKMORTON, Des Moines, Iowa; STANLEY COBB, Boston; J. M. NIELSEN, Los Angeles.

Wednesday, June 14—2 p. m.

Chairman's Address: Subacute Neuromuscular Exhaustion Syndrome (Lantern Demonstration).
J. M. NIELSEN, Los Angeles.

Myasthenia Gravis (Lantern Demonstration).
HENRY R. VIETS, Boston.

Musicogenic Epilepsy (Lantern Demonstration).
HANS H. REESE, Madison, Wis.

The Effect of Sulfonamide Drugs on Experimental Gunshot Wounds of Peripheral Nerves.
LOYAL DAVIS, FREDERICK HILLER, GEORGE E. PERRET and WALTER W. CARROLL, Chicago.

Epidural Spinal Abscess (Lantern Demonstration).
FRANCIS C. GRANT, Philadelphia.

Sheathing of the Retinal Veins in Multiple Sclerosis (Lantern Demonstration). C. W. RUCKER, Rochester, Minn.

Thursday, June 15—2 p. m.

Election of Officers

Psychiatric Selection of Men for the Armed Forces (Lantern Demonstration).
LIEUTENANT COLONEL WILLIAM MENNINGER, Medical Corps, Army of the United States; COMMANDER FRANCIS J. BRACELAND (MC), U.S.N.R., and RAYMOND W. WAGGONER, Ann Arbor, Mich.

A Psychiatric Study of Successful Soldiers.
CAPTAIN JACK G. SHEPS, Toronto, Ontario, Canada.

PANEL DISCUSSION ON OPERATIONAL FATIGUE IN COMBAT AIRCREWS

Essayists:
LIEUTENANT COLONEL JOHN M. MURRAY, Medical Corps, Army of the United States.
LIEUTENANT COLONEL ROY R. GRINKER, Medical Corps, Army of the United States.
MAJOR DONALD W. HASTINGS, Medical Corps, Army of the United States.

Neurophysiologic Improvements of Electronarcosis Over Electroshock Therapy in Schizophrenia (Motion Picture Demonstration).
GEORGE N. THOMPSON JR., Los Angeles.

The Question of Electric Convulsive Therapy in Psychoneuroses.
LOTHAR B. KALINOWSKY, S. E. BARRERA and W. A. HORWITZ, New York.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON ANESTHESIOLOGY IN NORTH BALLROOM, HOTEL STEVENS

Cerebral Metabolism in Experimental Head Injury (Lantern Demonstration).
E. S. GURDJIAN, Detroit; MAJOR JOHN E. WEBSTER, Medical Corps, Army of the United States, and W. E. STONE, Detroit.

The Influence of Different Forms of Artificial Respiration on the Pulmonary and Systemic Blood Pressure (Lantern Demonstration).
PERRY P. VOLPITTO and B. E. ABREU, Augusta, Ga.

The Relation of Anesthesia to Hypoxia and Anoxia (Lantern Demonstration). RALPH M. WATERS, Madison, Wis.

The Clinical Aspects of Asphyxia Neonatorum.
ALFRED D. BIGGS, Chicago.

Experimental Asphyxia Neonatorum (Motion Picture Demonstration). WILLIAM F. WINDLE, Chicago.

Neurologic and Neuropathologic Aspects of Asphyxia Neonatorum (Lantern Demonstration).
CYRIL B. COURVILLE and B. CLEMSON MARSH, Los Angeles.
Discussion to be opened by H. M. LIVINGSTONE and W. H. CASSELS, Chicago.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS IN TOWER ROOM, LOWER LEVEL, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—CLARK W. FINNERUD, Chicago.
Vice Chairman—FRANK J. EICHENLAUB, Washington, D. C.
Secretary—NELSON PAUL ANDERSON, Los Angeles.
Executive Committee—J. GARDNER HOPKINS, New York; C. F. LEHMANN, San Antonio, Texas; CLARK W. FINNERUD, Chicago.

Wednesday, June 14—2 p. m.

Chairman's Address. CLARK W. FINNERUD, Chicago.

The Use of the Electron Microscope in Dermatology (Lantern Demonstration). GEORGE L. CLARK, Urbana, Ill.
Discussion to be opened by GREGORY SHWARTZMAN, New York.

Kaposi's Varicelliform Eruption (Eczema Herpeticum) (Lantern Demonstration). FRANCIS W. LYNCH, St. Paul.
Discussion to be opened by OLIVER S. ORMSBY, Chicago, and CLINTON W. LANE, St. Louis.

The Exit Dose in Dermatologic Roentgen Therapy (Lantern Demonstration).
GEORGE CLINTON ANDREWS, C. B. BRAESTRUP and E. B. HEISEL, New York.
Discussion to be opened by HARRY R. FOERSTER, Milwaukee.

A Classification of Tuberculosis of the Skin (Lantern Demonstration).
HENRY E. MICHELSON and CARL W. LAYMON, Minneapolis.
Discussion to be opened by RUBEN NOMLAND, Iowa City, and FRED D. WEIDMAN, Philadelphia.

The Determination of Macrocytic Anemia as an Aid in the Diagnosis of Certain Deficiency Dermatoses (Lantern Demonstration).
GAROLD V. STRYKER and WILLIAM A. HALBEISEN, St. Louis.
Discussion to be opened by DUDLEY C. SMITH, Charlottesville, Va.

Thursday, June 15—2 p. m.

PANEL DISCUSSION ON INTENSIVE THERAPY OF EARLY SYPHILIS, WITH SPECIAL REFERENCE TO ARSENOTHERAPY EITHER ALONE OR COMBINED WITH OTHER AGENTS

ARTHUR G. SCHOCH, Dallas, Texas, Moderator

The Treatment of Early and Latent Syphilis in Six to Twelve Weeks with Triweekly Injections of Mapharsen: An Analysis of the First 4,800 Cases (Lantern Demonstration). HARRY EAGLE, U. S. P. H. S.

The Use of Arsphenamine in the Intensive Treatment of Early Syphilis.
A. BENSON CANNON and JEROME K. FISHER, New York.

Combined Fever and Arsenotherapy in the Intensive Treatment of Early Syphilis (Lantern Demonstration).
EVAN W. THOMAS, New York.
Discussion on papers included in Panel Discussion on Intensive Therapy of Early Syphilis to be opened by HERBERT RATTNER, Chicago.

PANEL DISCUSSION ON PENICILLIN IN THE TREATMENT OF SYPHILIS

UDO J. WILE, U. S. P. H. S., Moderator

Preliminary Results with Penicillin in Experimental Syphilis of Rabbits and in Early Syphilis of Human Beings.
JOHN F. MAHONEY, U. S. P. H. S.

The Preliminary Results of Penicillin Therapy in Early Syphi is in Human Beings with Varying Schemes of Treatment.
J. E. MOORE, Baltimore; LIEUTENANT COLONEL THOMAS H. STERNBERG, Medical Corps, Army of the United States; COMMANDER W. H. SCHWARTZ (MC), U.S. N.R.; JOHN F. MAHONEY, U. S. P. H. S., and W. BARRY WOOD JR., St. Louis.

Preliminary Results of Penicillin Therapy in Late Syphilis (Lantern Demonstration).
JOHN H. STOKES, Philadelphia; JOHN F. MAHONEY, U. S. P. H. S.; J. E. MOORE, Baltimore; COMMANDER W. H. SCHWARTZ (MC), U.S.N.R.; LIEUTENANT COLONEL THOMAS H. STERNBERG, Medical Corps, Army of the United States, and W. BARRY WOOD JR., St. Louis.
Discussion on papers included in Panel Discussion on Penicillin in the Treatment of Syphilis to be opened by CAPTAIN WILLIAM LEIFER, Medical Corps, Army of the United States, and LIEUTENANT COMMANDER E. E. BARKSDALE (MC), U.S.N.R.

Friday, June 16—2 p. m.

Election of Officers

Calluses, Cicatrices and Other Stigmas as an Aid in Establishing Personal Identity (Lantern Demonstration).
F. RONCHESE, Providence, R. I.
Discussion to be opened by LOUIS SCHWARTZ, Bethesda, Md., and John G. DOWNING, Boston.

Dermatoses of the Hands: Report of 450 Consecutive Cases (Lantern Demonstration).
C. GUY LANE, E. M. ROCKWOOD, CARL S. SAWYER and IRVIN H. BLANK, Boston.
Discussion to be opened by JOSEPH V. KLAUDER, Philadelphia, and FRANCIS E. SENEAR, Chicago.

Combined Dermal and Epidermal Sensitization.
H. J. TEMPLETON, Oakland, Calif.
Discussion to be opened by J. BEDFORD SHELMIRE, Dallas, Texas, and EDWARD A. OLIVER, Chicago.

Dermatologic Aspects of the Vesicant Gases.
MAJOR MARION I. DAVIS, Medical Corps, Army of the United States.
Discussion to be opened by COMMANDER ROBERT L. GILMAN (MC), U.S.N.R., and LEON GOLDMAN, Cincinnati.

Nodular Vasculitis of the Extremities (Lantern Demonstration).
HAMILTON MONTGOMERY and PAUL A. O'LEARY, Rochester, Minn.
Discussion to be opened by MICHAEL H. EBERT, Chicago, and JOHN H. LAMB, Oklahoma City.

Recurrent, Fixed Erysipelas-like Dermatophytid (Lantern Demonstration).
CAPTAIN MORRIS WAISMAN, Medical Corps, Army of the United States.
Discussion to be opened by JAMES H. MITCHELL, Chicago, and COMMANDER MARION B. SULZBERGER (MC), U.S.N.R.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS IN SOUTH BALLROOM, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—JOSEPH W. MOUNTIN, U. S. P. H. S.
Vice Chairman—E. L. STEBBINS, New York.
Secretary—W. A. SAWYER, Rochester, N. Y.
Executive Committee—CLARENCE D. SELBY, Detroit; HAVEN EMERSON, New York; JOSEPH W. MOUNTIN, U. S. P. H. S.

Wednesday, June 14—9 a. m.

Community Health Education by the Medical Profession (Lantern Demonstration). BRUNO GEBHARD, Cleveland.

Psychiatric Technics in the Management of Employee Problems.
L. E. HIMLER, Ann Arbor, Mich.

The Physical Fitness of Workers in Industrial Plants.
W. P. JACOBS, Clinton, S. C.

Bagasse Disease of the Lungs (Lantern Demonstration).
W. A. SODEMAN, New Orleans.

Chairman's Address: Relocating of Physicians as Prerequisite to Better Medical Service (Lantern Demonstration).
JOSEPH W. MOUNTIN, U. S. P. H. S.

Thursday, June 15—9 a. m.

PANEL DISCUSSION ON VARIATIONS IN CURRENT INDUSTRIAL MEDICAL SERVICE PLANS

Essayists (Lantern Demonstration):
JOHN J. WITMER, New York.
SIDNEY R. GARFIELD, Oakland, Calif.
M. S. BLOOM, Binghamton, N. Y.
JAMES C. McCANN, Worcester, Mass.
EDWARD M. JONES, Johnson City, N. Y.

Friday, June 16—9 a. m.

Election of Officers

Public Health Problems of Britain in Wartime.
ARTHUR MASSEY, Coventry, England.

Physical Fitness Program of Victory Corps Project Among High School Students. CARL A. WILZBACH, Cincinnati.

Lesions Simulating Tuberculosis Found on X-Ray Examinations of the General Population.
DAVID M. GOULD, U. S. P. H. S.

Report on "Local Health Units as the Basis of Total National Health Service."
HAVEN EMERSON and R. M. ATWATER, New York.

SECTION ON UROLOGY

MEETS IN TOWER ROOM, LOWER LEVEL, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—COMMANDER GERSHOM J. THOMPSON (MC), U.S.N.R.
Vice Chairman—ARBOR D. MUNGER, Lincoln, Neb.
Secretary—GRAYSON L. CARROLL, St. Louis.
Executive Committee—MEREDITH F. CAMPBELL, New York; VINCENT J. O'CONOR, Chicago; COMMANDER GERSHOM J. THOMPSON (MC), U.S.N.R.

Wednesday, June 14—9 a. m.

Ureterovesical Obstruction (Lantern Demonstration).
J. SYDNEY RITTER and SAMUEL E. KRAMER, New York.

A New Inspection Lens-Sheath as an Aid to Transurethral Resection (Lantern Demonstration).
SAMUEL A. VEST, Charlottesville, Va.

SYMPOSIUM ON THE TREATMENT OF CANCER OF THE PROSTATE GLAND

Effects of Biochemical Therapeusis in Cancer of the Prostate Gland: Further Observation (Lantern Demonstration).
WILLIAM P. HERBST, Washington, D. C.

Breast Changes Due to Diethylstilbestrol During Treatment of Cancer of the Prostate Gland (Lantern Demonstration).
GORDON F. MOORE, CARL A. WATTENBERG and D. K. ROSE, St. Louis.

Clinical Experience with Bilateral Orchiectomy in the Treatment of Cancer of the Prostate Gland (Lantern Demonstration).
JOHN L. EMMETT and L. F. GREENE, Rochester, Minn.

Experiences with Roentgen Ray, Castration and Endocrine Treatment of Cancer of the Prostate Gland (Lantern Demonstration).
JEFFERSON C. PENNINGTON, Nashville, Tenn.

Experiences with Orchiectomy for Carcinoma of the Prostate Gland.
H. C. BUMPUS JR., BEN D. MASSEY and EARL F. NATION, Pasadena, Calif.

Surgical Removal of Cancer of the Prostate Gland: The Radical Operation (Lantern Demonstration).
J. A. C. COLSTON, Baltimore.
Discussion to be opened by WALTER M. KEARNS, Milwaukee; REED M. NESBIT, Ann Arbor, Mich.; A. ELMER BELT, Los Angeles, and HUGH H. YOUNG, Baltimore.

Thursday, June 15—9 a. m.

Election of Officers

Analysis of Urinary Calculi by Methods of Optical and X-Ray Crystallography (Lantern Demonstration).
EDWIN L. PRIEN and CLIFFORD FRONDEL, Boston.

The Seminal Vesiculogram: An Effort at Interpretation (Lantern Demonstration).
COMMANDER JAMES C. SARGENT (MC), U.S.N.R., and LIEUTENANT COMMANDER JAMES I. FARRELL (MC), U.S.N.R.

Surgical Aspects of Cystic Diseases of the Kidneys.
OSWALD SWINNEY LOWSLEY, New York, and LIEUTENANT COMMANDER MARK S. CURTIS (MC), U.S.N.R.

The Urologic Treatment After Acute Spinal Injury (Lantern Demonstration).
LIEUTENANT COLONEL LLOYD G. LEWIS, Medical Corps, Army of the United States.

Chairman's Address: The Clinical Use of Penicillin in Genito-urinary Infections (Lantern Demonstration).
COMMANDER GERSHOM J. THOMPSON (MC), U. S. N. R.

Report on Treatment with Penicillin in 400 Cases of Gonorrhea (Lantern Demonstration).
LIEUTENANT COLONEL L. W. RIBA, Medical Corps, Army of the United States.

Pyelocystostomy (Lantern Demonstration).
ELMER HESS, Erie, Pa., and BURNETT W. WRIGHT, Nashville, Tenn.

Enuresis: The Use of the Urethrogram in Diagnosis (Lantern Demonstration). M. LEOPOLD BRODNY, Boston.
Discussion to be opened by JOHN H. MORRISSEY, New York; COMMANDER L. L. VESEEN (MC), U.S.N.R.; LINWOOD D. KEYSER, Roanoke, Va.; EDGAR BURNS, New Orleans; A. I. DODSON, Richmond, Va.; GEORGE H. EWELL, Madison, Wis.; WILLIAM F. BRAASCH, Rochester, Minn., and LIEUTENANT COLONEL DORRIN F. RUDNICK, Medical Corps, Army of the United States.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON OBSTETRICS AND GYNECOLOGY IN GRAND BALLROOM, HOTEL SHERMAN

Pyelitis in Pregnancy (Lantern Demonstration).
E. GRANVILLE CRABTREE, Boston.

Influence of Gynecologic Pathology on Urinary Tract Diseases (Lantern Demonstration).
J. M. HUNDLEY JR., Baltimore.

Problems of Diagnosis of Infertility in the Female (Lantern Demonstration). GEORGE H. GARDNER, Chicago.

Dysurias in the Female.
HERMAN L. KRETSCHMER and NOBLE SPROAT HEANEY, Chicago.

The Female Urethra (Lantern Demonstration).
A. I. FOLSOM, Dallas, Texas.
Discussion to be opened by REED M. NESBIT, Ann Arbor, Mich., and VINCENT J. O'CONOR, Chicago.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN LOUIS XVI AND CRYSTAL ROOMS, HOTEL SHERMAN

OFFICERS OF SECTION

Chairman—GUY A. CALDWELL, New Orleans.
Vice Chairman—THEODORE A. WILLIS, Cleveland.
Secretary—LIEUTENANT COLONEL FRANCIS M. MCKEEVER, Medical Corps, Army of the United States.
Executive Committee—J. ALBERT KEY, St. Louis; JAMES A. DICKSON, Cleveland; GUY A. CALDWELL, New Orleans.

Wednesday, June 14—9 a. m.

Fractures of the Elbow in Childhood (Lantern Demonstration).
HAROLD B. BOYD, Memphis, Tenn.

Revascularization of Carpal Bones (Lantern Demonstration).
MAJOR JAMES J. CALLAHAN, Medical Corps, Army of the United States.

Treatment of Skeletal Metastases in Prostatic Carcinoma (Lantern Demonstration). ROY I. PECK, Philadelphia.

Degenerative Arthritis of the Hip Joint Treated by One and Two Stage Arthrodesis with Metal Fixation (Watson-Jones) (Lantern Demonstration).
G. EDMUND HAGGART, Boston.

One Stage Combined Rib Resection and Spinal Fusion for Severe Scoliosis.
W. H. BICKEL, Rochester, Minn., and J. J. HINCHEY, St. Paul.

Delayed Healing Time of Fractures at High Altitudes.
MAJOR CLAUDE N. LAMBERT, Medical Corps, Army of the United States.

Thursday, June 15—9 a. m.

Election of Officers

Growth Arrest for Equalizing Leg Lengths (Motion Picture Demonstration). J. WARREN WHITE, Greenville, S. C.

Chairman's Address. GUY A. CALDWELL, New Orleans.

The Pathology of Motor End Plates in Skeletal Muscle, with Special Emphasis on Poliomyelitis (Lantern Demonstration). EBEN J. CAREY, Milwaukee.

Report of Committee for Investigation of Kenny Treatment of Poliomyelitis (Lantern Demonstration).
RALPH K. GHORMLEY, Chairman.

Lesions of the Musculotendinous Cuff of the Shoulder.
HARRISON L. MCLAUGHLIN, New York.

Slipping of the Upper Femoral Epiphysis: Diagnostic and Therapeutic Considerations. WILLIAM T. GREEN, Boston.

Friday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON RADIOLOGY

X-Ray Changes in Acute Hematogenous Osteomyelitis.
JOHN W. PIERSON, Baltimore.

The Clinical Diagnosis, Treatment and Prognosis of Acute Hematogenous Osteomyelitis (Motion Picture Demonstration). FRANK D. DICKSON, Kansas City, Mo.

X-Ray Changes in Epiphysial Disturbances in Children (Lantern Demonstration). HOWARD P. DOUB, Detroit.

The Clinical Diagnosis, Treatment and Prognosis of Epiphysial Disturbances in Childhood (Lantern Demonstration).
WALLACE H. COLE, St. Paul.

X-Ray Considerations of Traumatic Lesions of the Cervical Spine (Lantern Demonstration).
MAJOR GILBERT W. HEUBLEIN, Medical Corps, Army of the United States.

The Clinical Diagnosis, Treatment and Prognosis of Traumatic Lesions of the Cervical Spine (Lantern Demonstration).
ARTHUR G. DAVIS, Erie, Pa.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN SOUTH BALLROOM, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—EMMETT H. TERRELL, Richmond, Va.
Vice Chairman—J. ARNOLD BARGEN, Rochester, Minn.
Secretary—SARA M. JORDAN, Boston.
Executive Committee—FRANK C. YEOMANS, New York; WALTER L. PALMER, Chicago; EMMETT H. TERRELL, Richmond, Va.

Wednesday, June 14—2 p. m.

Anemia of Patients with Gastric Carcinoma (Lantern Demonstration).
JULES C. ABELS, New York; ABRAM OPPENHEIM, Fleischmann, N. Y.; GEORGE T. PACK, New York, and COLONEL CORNELIUS P. RHOADS, Medical Corps, Army of the United States.
Discussion to be opened by PAUL R. CANNON, Chicago.

Demonstration of Visceral Pain by Determination of Skin Potentials (Lantern Demonstration).
LESTER M. MORRISON and ERNEST A. SPIEGEL, Philadelphia.
Discussion to be opened by FRANCIS M. POTTENGER, Monrovia, Calif.

Sigmoidoscopy in Diagnosis and Treatment (Lantern Demonstration). FRANK C. YEOMANS, New York.
Discussion to be opened by DESCUM C. MCKENNEY, Buffalo.

Curling's Ulcer in Experimental Burns.
FRANK W. HARTMAN, Detroit.
Discussion to be opened by OWEN H. WANGENSTEEN, Minneapolis.

Observations on the Chemical Composition of the Blood and on Some Cardiovascular Reactions in Chronic Peptic Ulcer Throughout One Year (Lantern Demonstration).
RUSSELL S. BOLES, HELENA E. RIGGS and JOHN G. REINHOLD, Philadelphia.
Discussion to be opened by HEINRICH NECHELES, Chicago.

The Management of Peptic Ulcers Among Navy Personnel.
LIEUTENANT HUGH R. BUTT (MC), U.S.N.R.
Discussion to be opened by LIEUTENANT COLONEL CLAUDE S. BECK, Medical Corps, Army of the United States.

The Use of Aluminum Hydroxide and Other Nonabsorbable Acids in the Treatment of Peptic Ulcer (Lantern Demonstration). EVERETT N. COLLINS, Cleveland.
Discussion to be opened by JAMES FLEXNER, New York.

Gastroduodenal Dyssynergia.
BENJAMIN M. BERNSTEIN, Brooklyn.
Discussion to be opened by WALTER C. ALVAREZ, Rochester, Minn.

Psychosomatic Relationship to Gastrointestinal Diseases.
MARTIN G. VORHAUS and S. ZACHARY ORGEL, New York.
Discussion to be opened by FRANZ G. ALEXANDER, Chicago.

Medical War Problems Confronting the Civilian Physician Today (Lantern Demonstration).
HENRY A. RAFSKY, New York.
Discussion to be opened by ERNEST H. GAITHER, Baltimore.

Procedures for Handling Gastrointestinal Cases in the Army and Navy (Lantern Demonstration).
MAJOR SAMUEL MORRISON, Medical Corps, Army of the United States.
Discussion to be opened by SIDNEY A. PORTIS, Chicago.

Thursday, June 15—2 p. m.

Election of Officers

Chairman's Address: Present Day Proctology.
EMMETT H. TERRELL, Richmond, Va.

Traumatic Injuries of the Rectum (Lantern Demonstration).
PAUL C. BLAISDELL, Pasadena, Calif.
Discussion to be opened by MALCOLM R. HILL, Los Angeles.

Benign Surgical Lesions of the Right Colon (Lantern Demonstration). CURTICE ROSSER, Dallas, Texas.
Discussion to be opened by WALTER A. FANSLER, Minneapolis.

Operative Complications of Colonic Surgery and Their Management (Lantern and Motion Picture Demonstration).
HARRY E. BACON and W. WAYNE BABCOCK, Philadelphia.
Discussion to be opened by EMMETT H. TERRELL, Richmond, Va.

Colon Surgery and the Sulfonamide Drugs, with Especial Reference to the Elimination of the Mikulicz Operation (Lantern and Motion Picture Demonstration).
MOSES BEHREND, Philadelphia.
Discussion to be opened by FRANK H. LAHEY, Boston.

Resistance: The Function of the Colon.
EDWARD G. MARTIN, Detroit.
Discussion to be opened by JOHN G. MATEER, Detroit.

Distortions of the Gastric Feeding Reflex Associated with Intragastric and Extragastric Pathology: Their Clinical Significance (Lantern Demonstration).
PAUL B. WELCH, Miami, Fla.
Discussion to be opened by MORTON J. OPPENHEIMER, Rochester, Minn.

Criteria in the Management of Chronic Ileitis (Lantern Demonstration). EVERETT D. KIEFER, Boston.
Discussion to be opened by J. ARNOLD BARGEN, Rochester, Minn.

Small Intestinal Lesions Producing Massive Hemorrhage and Symptoms Simulating Peptic Ulcer.
HARRY L. SEGAL and W. J. MERLE SCOTT, Rochester, N. Y.
Discussion to be opened by HARVEY B. STONE, Baltimore.

Intractable Amebic Colitis (Lantern Demonstration).
DANIEL N. SILVERMAN and ALAN N. LESLIE, New Orleans.
Discussion to be opened by WALTER L. PALMER, Chicago.

Bacillary Dysentery in War (Lantern Demonstration).
JOSEPH FELSEN, New York.
Discussion to be opened by HERMAN M. POLLARD, Ann Arbor, Mich.

Friday, June 16—2 p. m.

JOINT MEETING WITH SECTION ON SURGERY, GENERAL AND ABDOMINAL, IN GRAND BALLROOM, HOTEL SHERMAN

Inflammatory Lesions of the Stomach and Duodenum:
Medical Aspect (Lantern Demonstration).
A. H. AARON, Buffalo.
Surgical Aspect. FRANK H. LAHEY, Boston.
Discussion to be opened by ALBERT F. R. ANDRESEN, Brooklyn, and ALTON OCHSNER, New Orleans.

Inflammatory Lesions of the Small Intestine:
Medical Aspect (Lantern Demonstration).
HENRY L. BOCKUS, Philadelphia.
Surgical Aspect. HENRY W. CAVE, New York.
Discussion to be opened by BURRILL B. CROHN, New York, and VERNON C. DAVID, Chicago.

Inflammatory Lesions of the Colon:
Medical Aspect (Lantern Demonstration).
J. ARNOLD BARGEN, Rochester, Minn.
Surgical Aspect (Lantern Demonstration).
THOMAS E. JONES, Cleveland.
Discussion to be opened by DONOVAN C. BROWNE, New Orleans, and RAYMOND W. MCNEALY, Chicago.

SECTION ON RADIOLOGY

MEETS IN NORTH BALLROOM, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—ROBERT A. ARENS, Chicago.
Vice Chairman—EDWIN C. ERNST, St. Louis.
Secretary—JOHN T. MURPHY, Toledo, Ohio.
Executive Committee—RAYMOND C. BEELER, Indianapolis; RALPH S. BROMER, Bryn Mawr, Pa.; ROBERT A. ARENS, Chicago.

Wednesday, June 14—2 p. m.

Cardiospasm and the Normal Esophagus: A Roentgenologic Study of Muscular Action (Lantern Demonstration).
FREDERIC E. TEMPLETON and PAUL M. MOORE, Cleveland.

Pernicious Anemia and Tumors of the Stomach (Lantern Demonstration).
LEO G. RIGLER, Minneapolis; CAPTAIN DANIEL L. FINK, Medical Corps, Army of the United States, and LIEUTENANT HENRY L. KAPLAN, Medical Corps, Army of the United States.

The Value of Scout Films of the Abdomen (Lantern Demonstration).
ARTHUR P. ECHTERNACHT and JOHN ALEXANDER CAMPBELL, Indianapolis.

Osteitis Condensans Ilii (Lantern Demonstration).
HUGH F. HARE, Boston.

Roentgenologic Aspects of Pain in the Upper Extremity.
CAPTAIN CHARLES F. BEHRENS (MC), U.S.N.R.

Thursday, June 15—2 p. m.

Election of Officers

Chairman's Address: Radiologic Aspects of the Urologic Problem (Lantern Demonstration).
ROBERT A. ARENS, Chicago.

Urinary Complications in Cases of Carcinoma of the Uterine Cervix: Management and Prognosis.
HARRY H. BOWING and ROBERT E. FRICKE, Rochester, Minn.

Industry's Attitude Toward X-Ray Examination of the Chest (Lantern Demonstration). C. D. SELBY, Detroit.

Benign Pneumonoconiosis (Lantern Demonstration).
EUGENE P. PENDERGRASS, Philadelphia.

An Analysis of Disqualifying Conditions Found During the Chest X-Ray Examination of 105,141 Selectees (Lantern Demonstration).
MAJOR RICHARD E. KINZER, Medical Corps, Army of the United States.

Friday, June 16—9 a. m.

JOINT MEETING WITH THE SECTION ON ORTHOPEDIC SURGERY IN LOUIS XVI AND CRYSTAL ROOMS, HOTEL SHERMAN

X-Ray Changes in Acute Hematogenous Osteomyelitis.
JOHN W. PIERSON, Baltimore.

The Clinical Diagnosis, Treatment and Prognosis of Acute Hematogenous Osteomyelitis (Motion Picture Demonstration). FRANK D. DICKSON, Kansas City, Mo.

X-Ray Changes in Epiphysial Disturbances in Children (Lantern Demonstration). HOWARD P. DOUB, Detroit.

The Clinical Diagnosis, Treatment and Prognosis of Epiphysial Disturbances in Childhood (Lantern Demonstration). WALLACE H. COLE, St. Paul.

X-Ray Considerations of Traumatic Lesions of the Cervical Spine (Lantern Demonstration). MAJOR GILBERT W. HEUBLEIN, Medical Corps, Army of the United States.

The Clinical Diagnosis, Treatment and Prognosis of Traumatic Lesions of the Cervical Spine (Lantern Demonstration). ARTHUR G. DAVIS, Erie, Pa.

SECTION ON ANESTHESIOLOGY

MEETS IN NORTH BALLROOM, HOTEL STEVENS

OFFICERS OF SECTION

Chairman—PAUL M. WOOD, New York.

Vice Chairman—WILLIAM W. HUTCHINSON, Los Angeles.

Secretary—JOHN S. LUNDY, Rochester, Minn.

Executive Committee—RALPH M. WATERS, Madison, Wis.; THOMAS J. COLLIER, Atlanta, Ga.; PAUL M. WOOD, New York.

Wednesday, June 14—9 a. m.

The Recording of Surgical and Anesthetic Data in Two Army General Hospitals (Lantern Demonstration). MAJOR C. P. WANGEMAN, Medical Corps, Army of the United States, and MAJOR STEVENS J. MARTIN, Medical Corps, Army of the United States.
Discussion to be opened by MEYER SAKLAD, Providence, R. I. and CAPTAIN W. ALLEN CONROY, Medical Corps, Army of the United States.

Anesthesia Study Commissions. HENRY S. RUTH, Merion Station, Pa.
Discussion to be opened by FREDERICK P. HAUGEN, Philadelphia, and R. J. WHITACRE, East Cleveland, Ohio.

Why Use Spinal Anesthesia (Lantern Demonstration)? URBAN H. EVERSOLE, Boston.

Continuous Spinal Anesthesia: Its Usefulness and the Technic Involved. CAPTAIN EDWARD B. TUOHY, Medical Corps, Army of the United States.
Discussion on papers of DR. EVERSOLE and DR. TUOHY to be opened by WILLIAM T. LEMMON, Philadelphia, and CAPTAIN FLOYD T. ROMBERGER, Medical Corps, Army of the United States.

Curare (Lantern Demonstration). HAROLD R. GRIFFITH, Montreal, Quebec, Canada.
Discussion to be opened by STUART C. CULLEN, Iowa City, and J. W. BAIRD, Minneapolis.

Business Meeting

Thursday, June 15—9 a. m.

Election of Officers

Chairman's Address: Some Aims of an Anesthesiologist. PAUL M. WOOD, New York.

Continuous Caudal Analgesia: A Technic in Therapeutics, Surgery and Obstetrics (Lantern and Motion Picture Demonstration). ROBERT A. HINGSON, U. S. P. H. S.
Discussion to be opened by JOHN G. P. CLELAND, Oregon City, Ore., and H. CLOSE HESSELTINE, Chicago.

The Effect of Moisture on the Absorption Efficiency of Soda Lime (Lantern Demonstration). JOHN ADRIANI, New Orleans.
Discussion to be opened by JAMES H. BENNETT, Cincinnati, and CAPTAIN RALPH S. SAPPENFIELD, Medical Corps, Army of the United States.

Intravenous Anesthesia (Lantern Demonstration). R. CHARLES ADAMS, Rochester, Minn.
Discussion to be opened by MARY KARP and ALICE MCNEAL, Chicago.

Therapeutic and Diagnostic Nerve Blocking (Lantern Demonstration). E. A. ROVENSTINE, New York.
Discussion to be opened by MAJOR C. F. MCCUSKEY, Medical Corps, Army of the United States, and H. O. BROWN, Chicago.

Friday, June 16—9 a. m.

JOINT MEETING WITH THE SECTION ON NERVOUS AND MENTAL DISEASES

Cerebral Metabolism in Experimental Head Injury (Lantern Demonstration). E. S. GURDJIAN, Detroit; MAJOR JOHN E. WEBSTER, Medical Corps, Army of the United States, and W. E. STONE, Detroit.

The Influence of Different Forms of Artificial Respiration on the Pulmonary and Systemic Blood Pressure (Lantern Demonstration). PERRY P. VOLPITTO and B. E. ABREU, Augusta, Ga.

The Relation of Anesthesia to Hypoxia and Anoxia (Lantern Demonstration). RALPH M. WATERS, Madison, Wis.

The Clinical Aspects of Asphyxia Neonatorum. ALFRED D. BIGGS, Chicago.

Experimental Asphyxia Neonatorum (Motion Picture Demonstration). WILLIAM F. WINDLE, Chicago.

Neurologic and Neuropathologic Aspects of Asphyxia Neonatorum (Lantern Demonstration). CYRIL B. COURVILLE and B. CLEMSON MARSH, Los Angeles.
Discussion to be opened by H. M. LIVINGSTONE and W. H. CASSELS, Chicago.

SECTION ON MISCELLANEOUS TOPICS

Sessions for the General Practitioner

MEETS IN MURAL ROOM, HOTEL MORRISON

OFFICERS OF SESSIONS

Chairman—J. CRAIG BOWMAN, Upper Sandusky, Ohio.

Secretary—WINGATE M. JOHNSON, Winston-Salem, N. C.

Wednesday, June 14—9 a. m.

Chairman's Address. J. CRAIG BOWMAN, Upper Sandusky, Ohio.

The Medical Treatment of Psychogenic Disturbances, with Special Reference to the Gastrointestinal Tract and Fatigue (Lantern Demonstration). SIDNEY A. PORTIS, Chicago.
Discussion to be opened by COLONEL LEONARD G. ROWNTREE, Medical Corps, Army of the United States, and HOBART A. REIMANN, Philadelphia.

The Newer Sulfonamides (Lantern Demonstration). M. A. BLANKENHORN, Cincinnati.
Discussion to be opened by LAWRENCE D. THOMPSON, St. Louis.

Penicillin Therapy: Its Use and Limitation (Lantern Demonstration). WALLACE E. HERRELL, Rochester, Minn.

Chief Complaint: Stiff Neck (Lantern Demonstration). JOHN A. TOOMEY, Cleveland.
Discussion to be opened by ARCHIBALD L. HOYNE, Chicago, and GILBERT J. LEVY, Memphis, Tenn.

Cutaneous Manifestations of the Fungi Causing Dermatophytosis and Onychomycosis and Their Treatment (Lantern Demonstration). ROYAL M. MONTGOMERY, New York.
Discussion to be opened by JOHN H. LAMB, Oklahoma City, and ARTHUR C. CURTIS, Ann Arbor, Mich.

Thursday, June 15—9 a. m.

Gastrointestinal Conditions Simulating or Aggravating Cardiovascular Diseases. WILLIAM EARL CLARK, Washington, D. C.
Discussion to be opened by SARA M. JORDAN, Boston.

Acute Lower Abdominal Lesions in the Female (Lantern Demonstration). LIEUTENANT COLONEL W. J. CARRINGTON, Medical Corps, Army of the United States.

The Dysenteries: Acute and Chronic. LIEUTENANT COLONEL THOMAS T. MACKIE, Medical Corps, Army of the United States.
Discussion to be opened by GEORGE T. HARRELL, Winston-Salem, N. C.

The Male Climacteric (Lantern Demonstration). AUGUST A. WERNER, St. Louis.
Discussion to be opened by CHARLES W. DUNN, Philadelphia.

Anemia Therapy: Review of Various Liver and Stomach Fractions and Iron Salts (Lantern Demonstration). E. J. TEETER, Indianapolis.
Discussion to be opened by FRANCIS D. MURPHY, Milwaukee, and RAPHAEL ISAACS, Chicago.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the fourth floor of the Palmer House, occupying the exhibition hall, the foyer to the Grand Ball Room and adjoining corridors.

Emphasis will be placed on war medicine with large exhibits from the Army and the Navy. Special exhibits include fractures, the treatment of burns, chemotherapy and infectious diseases, and rehabilitation. Other features include a group of exhibits on tropical medicine, and lectures and conferences on rheumatic fever and heart disease.

Each section of the Scientific Assembly has sponsored groups of exhibits dealing with the various specialties of medicine, but emphasis is placed on the fact that the Scientific Exhibit is primarily for the physician in general practice.

Motion pictures will be shown in the Casino at the Morrison Hotel on a continuous schedule throughout the week.

Admission to the Scientific Exhibit will be limited to persons wearing Fellowship or other badges of the convention and to guests to whom special cards of admission have been issued. The public will not be admitted to the Scientific Exhibit.

SPECIAL EXHIBITS

The Committee on Scientific Exhibit of the Board of Trustees is sponsoring four special exhibits on fractures, the treatment of burns, chemotherapy and infectious diseases, and rehabilitation. Each exhibit is presented under the auspices of a special exhibit committee. (These exhibits are not open to awards.)

Special Exhibit on Fractures

The special exhibit on fractures is presented for the fourteenth time. The committee in charge is composed of:

Kellogg Speed, Chicago, chairman.
Frank D. Dickson, Kansas City, Mo.
Walter Estell Lee, Philadelphia.

The following subjects will be considered with continuous demonstrations throughout the week:

1. How to Make and Store Plaster of Paris Bandages.
2. Fractures of the Radius—Lower End.
3. Fractures of the Ankle.
4. Emergency Treatment of Fractures for Transportation.

A pamphlet giving the essential features of the exhibit has been prepared for distribution.

A large corps of demonstrators will assist the committee in the presentation of the exhibit, including:

John D. Adams, Boston.
C. Glenn Barber, Cleveland.
Gordon W. Batman, Indianapolis.
Ralph G. Carothers, Cincinnati.
William James Carson, Milwaukee.
Dwight F. Clark, Evanston, Ill.
George J. Curry, Flint, Mich.
John D. Ellis, Chicago.
Vernon L. Hart, Minneapolis.
Daniel H. Levinthal, Chicago.
Walter D. Ludlum Jr., New York.
Robert T. McElvenny, Chicago.
James W. Martin, Omaha.
John R. Nilsson, Omaha.
John R. Norcross, Chicago.
D. H. O'Donoghue, Oklahoma City.
E. Payne Palmer, Phoenix, Ariz.
Lynn Rankin, Upper Darby, Pa.
Sheppard Remington, Chicago.
Robert O. Ritter, Chicago.
Samuel L. Robbins, Cleveland.
L. D. Smith, Milwaukee.
Clarence H. Snyder, Grand Rapids, Mich.
James R. Tillotson, Lima, Ohio.
Edgar C. Turner, Evanston, Ill.
H. W. Virgin Jr., Pensacola, Fla.
Harry Winkler, Charlotte, N. C.

Special Exhibit on the Treatment of Burns

The special exhibit on the treatment of burns is presented for the first time under the auspices of a committee composed of:

Stanley J. Seeger, Texarkana, Texas, chairman.

Ernest W. Brown, Captain (MC), U. S. Navy, Bureau of Medicine and Surgery, Washington, D. C.
Joseph E. Hamilton, Captain (MC), A. U. S., Walter Reed General Hospital, Washington D. C.

The following subjects will be included in the exhibit under the direction of the physicians indicated:

1. Treatment of Burns in the Army. Joseph E. Hamilton, Captain, M. C., A. U. S.

The exhibit consists of three parts: Part one deals with characteristics of war burns and with facts and figures related to war burns. Under this heading will be considered (a) problems peculiar to war burns; (b) types of war burns and (c) war burn statistics. Part two—a panoramic picture of the treatment of the burn casualty from time of injury in the field to the completion of rehabilitation in the General Hospital. At the extreme left of this panorama will be manikins representing the burned soldier and the company aid man kneeling over him, perhaps in the act of starting plasma. Then by a series of paintings the chain of evacuation will be indicated. It is especially desired to bring out the difficulties met with in the handling of burns in the field. The recommended Army treatment and its place of administration will be outlined in appropriate places. Part three shows the treatment of the burn in the General Hospital. The management of the sloughing burn as it arrives in the hospital, the whirlpool bath, preparation for skin grafting, physical therapy, rehabilitation, etc., will be shown. The role of penicillin in the burn treatment will be given prominent representation.

F. H. Netter, Captain, M. C., A. U. S., will assist in the demonstrations.

2. Local Treatment of Burns. Roy D. McClure, Henry Ford Hospital, Detroit.

The exhibit emphasizes the use of pressure dressings, with a discussion of washing versus nonwashing technics. It shows liver damage resulting from the use of tannic acid, the shortcomings of gentian violet and triple dyes and reasons why the sulfonamides should not be used locally. Results from the use of more than one hundred proprietary remedies are listed. Attention is given to the treatment of alkali and acid burns and burns of the hand.

The following physicians will assist in the demonstrations:

Conrad R. Lam, Detroit.
Oliver Cope, Boston.
John W. Hirschfeld, Detroit.
Sumner L. Koch, Chicago.
Vinton E. Siler, Cincinnati.
Neil Owens, New Orleans.

3. Treatment of Burns; General Care of the Burned Patient. Henry N. Harkins, Johns Hopkins University School of Medicine, Baltimore.

Exhibit demonstrating the chronologic course of the general care of the burned patient from the time of receiving the burn to that of final discharge with complete epithelization; relative importance of general as opposed to local care; relationship between general and local management with discussion of joint action of two in effecting an early cure; special emphasis on burn shock, toxemia, and sepsis in early stages; pulmonary edema and anoxia; plasma and blood transfusion; electrolytes and sodium lactate; final emphasis on hypoproteinemia and secondary anemia in late stages with extensive granulating surfaces.

(Motion picture in the Casino, Morrison Hotel.)

4. Establishment of a Skin Cover Following a Thermal Burn. Earl C. Padgett, University of Kansas School of Medicine, Kansas City, Mo.

The exhibit outlines the properties and classifications of the common types of skin grafts, preliminary preparation of the recipient area, the technic of the removal of skin grafts, their application and proper subsequent dressings.

Dr. John H. Gaskins, Kansas City, will assist in the demonstrations.

(Motion picture in the Casino, Morrison Hotel.)

5. Chemical Burns of the Eyes. Alan C. Woods, Johns Hopkins Hospital, Baltimore.

The general characteristics of chemical burns of the eye are outlined and illustrated by photographs and kodachrome slides of burns by acids, alkalis, mustard gas, lewisite and other gases. New regimens of treatment are presented, including both specific antidotes and general measures for the prevention of complications.

The following physicians will assist in the demonstrations:

William F. Hughes Jr., Baltimore.
Alfred E. Maumenee, Baltimore.
Roy O. Scholz, Baltimore.

6. Electric Burns. Hart Ellis Fisher, Chicago.

Through the medium of photographs, charts and drawings it is intended to show those factors that determine the severity of electric burns. Burns regardless of their origin are due to heat of one nature or another. Burn therapy from electric current does provide some unusual conditions to be present, knowledge of which assures a better prognosis for the patient if properly understood by the physician. Electric burns are generally more severe than those from other sources because of the enormous heat developed from the skin resistance to the passage of the current. Not only do they involve the skin surface, but the destruction may extend deep into the tissues, damaging the nerves, blood vessels, muscles and even the bones. The pathways of the electric current through the body will be shown with an electric neon lighted manikin. A summary of the results obtained in 870 electric burn cases and 402 electrification cases.

Dr. George Howard Irwin, Chicago, will assist in the demonstrations.

7. Prevention of Burns in the Navy. Ernest W. Brown, Captain (MC), U. S. Navy (retired).

The exhibit will emphasize the prevention of flash burns in naval action by means of certain clothing equipment and a protective ointment. A mechanical book will review the development of antiflash protective clothing and protective ointment by the Medical Department of the Navy. A manikin will illustrate the battle dress which has been recommended for adoption by the Naval Medical Department and which is in process of procurement for sea trials. The present official antiflash clothing equipment will also be shown. In addition, a manikin will illustrate the asbestos fire fighting suit, designed for the prevention of burns while extinguishing fires.

The following physicians will assist in the demonstrations:

E. L. Lozner, Lieutenant (MC), U.S.N.R.
R. H. Pudenz, Lieutenant (MC), U.S.N.R.

Special Exhibit on Chemotherapy and Infectious Diseases

The Special Exhibit on Chemotherapy and Infectious Diseases is presented under the auspices of a special committee composed of:

Chester S. Keefer, Boston, chairman.
Henry E. Meleney, New York,
Austin E. Smith, Chicago,

and with the assistance of:

Donald G. Anderson, Boston, and Harry Most, New York.

The exhibit shows the status of sulfonamide and penicillin chemotherapy and of tropical diseases. The sulfonamide section presents data on the incidence of toxic reactions, choice of sulfonamide compound, absorption and distribution in the tissues, degree of acidulation in the blood and urine, and solubility of the various acidulated derivatives. The section of tropical diseases is illustrated and designed to offer information on cause, diagnosis, prevention and treatment of these infections.

Competent demonstrators will assist the committee throughout the week, including:

Douglas N. Forman, New York.
J. G. Vaughan, China.
E. M. Dodd, Iran.
W. J. K. Clothier, Africa.
D. C. Gordon, Brazil.
Hyla Watters, China.

Special Exhibit on Rehabilitation

A group of exhibits emphasizing the current importance of rehabilitation and reemployment of the disabled is presented by the Council on Industrial Health and the Council on Physical Therapy of the American Medical Association in cooperation with representatives of the Army, Navy, Veterans Administration and Federal Security Agency. The committee in charge consists of:

Carl M. Peterson, Council on Industrial Health.
Howard A. Carter, Council on Physical Therapy.
C. F. Behrens, Captain (MC), U.S.N., Naval Medical Center, Bethesda, Md.
Donald L. Rose, Major, M. C., A. U. S., Walter Reed Hospital, Washington, D. C.
K. A. Carroll, Hines Hospital, Hines, Ill.
Dean Clark, Office of Vocational Rehabilitation, Federal Security Agency, Washington, D. C.

The following subjects are included and demonstrated by:

Fractures: Kellogg Speed, Chicago.

Amputations: Henry H. Kessler, Mare Island, Calif.

Lame Backs: Frank R. Ober, Boston.

Hard of Hearing: William E. Grove, Milwaukee.

Tuberculosis: Leroy U. Gardner, Saranac Lake, N. Y., and Holland Hudson, New York.

Heart Disease: William D. Stroud, Philadelphia, and Rufus B. Crain, Rochester, N. Y.

Psychiatry: George S. Stevenson, New York, and Thomas A. C. Rennie, New York.

Community Relations: Harold A. Vonachen, Peoria, Ill.

Reemployment: Max R. Burnell, Flint, Mich.

Special demonstrators will be in attendance during the week. Particular attention will be directed at general and special medical procedures, physical and occupational therapy, vocational training and selective placement in suitable occupation.

ARMY AND NAVY EXHIBITS

Three groups of exhibits have been arranged depicting the activities of the Army and Navy in wartime. These are in addition to the individual presentations by Army and Navy medical officers found in other parts of the hall.

Bureau of Medicine and Surgery, Navy Department, Washington, D. C.:

The Medical Department of the United States Navy: Featured in the exhibit of the Medical Department of the Navy is the first showing of a collection of seventy-five original paintings depicting a cross section of current naval medical activities. To gather material for this series, two artists were sent to the South Pacific, and others spent much time sketching continental naval and marine medical activities. Many scenes of medical action in the field and afloat are included. The painters who participated in the program under the direction of the Associated American Artists are Joseph Hirsch, Kerr Eby, Julian Levi, Carlos Andreson, David Stone Martin and Irwin Hoffman. Mr. S. DeWitt Clough, president of the Abbott Laboratories, will present the collection to the Navy as part of its permanent pictorial record of the war. Vice Admiral Ross T. McIntire (MC), U.S.N., Surgeon General of the Navy, will accept the paintings on behalf of the Navy during the course of the meetings. Complementing this attraction is an exhibit of large scale models of a typical advance base hospital on a Pacific island and of the National Naval Medical Center. Medical aspects of submarine activities and those concerned with increasing the survival time of the shipwrecked are also exhibited.

The following naval officers will assist with the demonstrations:

Eugene L. Lozner, Lieutenant, MC-V(S), U.S.N.R., Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md., in charge.
Walter Welham, Lieutenant Commander (MC) U.S.N., Experimental Diving Unit, Navy Yard, Washington, D. C. (Submarine Medicine).
H. R. Evans, Lieutenant (HC), U.S.N., Naval Medical School, National Naval Medical Center, Bethesda, Md.
H. F. A. Long, Ensign (HC), U.S.N., Naval Medical School, National Naval Medical Center, Bethesda, Md.

Howard A. Rusk, Lieutenant Colonel, M. C., and Donald A. Covalt, Major, M. C., U. S. Army Air Forces Headquarters, Washington, D. C.:

Convalescent Training Program in Army Air Forces Hospitals: Exhibit of descriptive material, literature and photographs depicting the program in action at various Army Air Forces hospital. (Motion picture in the Casino, Morrison Hotel.)

Army Medical Museum, Army Institute of Pathology, Office of the Surgeon General, U. S. Army, Washington, D. C.:

Pathology and Medical Art in the War: The exhibit includes: (1) Pathologic Material: Pathology of tropical diseases; pathology of liver and kidney in burns, and pathology of sul-

fonamide drug intoxication. (2) Art Material: The Graphic Portfolio on First Aid—a pictorial presentation of how first aid should be given under battle conditions; moulages of war wounds used for training Medical Department enlisted men; neurologic diagnosis charts—a series of original charts used in training neurosurgeons in the Army; examples of the work of the Museum and Medical Arts Service. (3) Material Available for Study: Loan sets of slides and atlases and tropical disease charts. (4) Pictures of the Museum: Pictures and drawings showing the present and proposed Museum building.

The following Army officers will assist with the demonstrations:

J. E. Ash, Colonel, M. C., U. S. Army.
A. C. Allen, Captain, M. C., A. U. S.
Sophie Spitz, Contract Surgeon.
Ralph P. Creer, Captain, Sn. C., A. U. S.

LECTURES AND CONFERENCES

Lectures and conferences will be held continuously throughout the week in rooms adjoining the exhibition hall.

Rheumatic Fever

The Section on Pediatrics, in cooperation with the Rheumatic Fever Committee of the American Academy of Pediatrics, has arranged informal daily clinical conferences on rheumatic fever.

The committee in charge consists of:

Louis N. Katz, Chicago, chairman
G. K. Fenn, Chicago. E. B. Bay, Chicago.

Among the consultants on duty during the week will be:

E. V. Allen, Colonel, M. C., A. U. S.
A. R. Barnes, Rochester, Minn.
W. H. Bunn, Youngstown, Ohio.
J. G. Carr, Chicago
N. C. Gilbert, Chicago.
T. R. Harrison, Dallas, Tex.
G. R. Herrmann, Galveston, Tex.
R. L. Levy, New York.
H. M. Marvin, New Haven, Conn.
E. S. Nichol, Miami, Fla.
R. W. Scott, Cleveland.
F. M Smith, Iowa City.
Sidney Strauss, Chicago.
W. D. Stroud, Philadelphia.
D. C. Sutton, Chicago.
H. E. Ungerleider, New York.
I. S. Wright, Lieutenant Colonel, M. C., A. U. S.

WARTIME GRADUATE MEDICAL MEETINGS

The program of clinics, demonstrations and lectures for medical officers of the armed forces and civilian doctors is presented, showing a nationwide extension movement in medical education.

American medicine has mobilized its superb teaching personnel and facilities for the purpose of placing opportunities for further advanced medical instruction in the large hospitals of the armed forces in the United States, free of cost to the government. On request from the commanding officer of a service hospital, courses of instruction in the form of teaching ward rounds, clinical-pathologic conferences, practical demonstrations, study groups, motion pictures and formal lectures will be conducted by leading authorities of American medicine working in collaboration with specialists already in the services. This program has been initiated by the American Medical Association, American College of Physicians and American College of Surgeons and has the unqualified support of the deans and faculties of fifty-five of the nation's leading medical schools.

The program has the authorization of the Surgeons General of the United States Army, United States Navy and United States Public Health Service

The following exhibit committee is in charge of the booth:

Edward L. Bortz, Captain, U. S. N. R., Philadelphia.
LeRoy H. Sloan, Chicago
Newell C. Gilbert, Chicago.
Warren H. Cole, Chicago.

Grant Park and the Chicago skyline.

Diagnosis and proper management of a case are the most important items in the control of the disease. Physicians will have an opportunity to discuss these and other practical clinical questions with nationally known rheumatic fever experts. This will be an unusual opportunity to exchange views and secure advice about a disease which is rapidly gaining recognition as one warranting intensive professional study.

Among the consultants on duty during the week will be:

Stanley Gibson, Chicago.
Oswald Fenton Hedley, Bethesda, Md.
T. Duckett Jones, Boston.
Robert L. Jackson, Iowa City.
Alexander T. Martin, New York.
M. J. Shapiro, Minneapolis.
R. R. Struthers, Montreal, Que.
Leo Taran, Brooklyn.
Bernard J. Walsh, Washington, D. C.
May Wilson, New York

Adjoining the conference room, an exhibit on Rheumatic Fever in Young Hearts is presented by D. B. Armstrong and George M. Wheatley, Metropolitan Life Insurance Company, New York.

Heart Disease

Conferences on heart disease have been arranged by the Section on Practice of Medicine in cooperation with the American Heart Association. Question and answer sessions, aimed to meet the specific problems of the practicing physicians, will be conducted by recognized authorities in cardiovascular diseases each morning at 9:30 and 11 and each afternoon at 2:30 and 4 from Monday noon to Friday noon.

TROPICAL MEDICINE

The subject of tropical medicine assumes special importance during the present war emergency. Several exhibits dealing with various details of the problem have been assembled.

EUGENE R. WHITMORE, Georgetown University School of Medicine, and Doctors Hospital, Washington, D. C.:

Parasitology and Tropical Diseases: Exhibit of charts, lantern slides and microscope demonstrations of important animal parasites. (From the Section on Pathology and Physiology.)

WILLIAM HUGH HEADLEE and C. G. CULBERTSON, Indiana University School of Medicine, Indianapolis:

Parasite Infections in Indiana: Exhibit showing that a variety of parasitic infections are present in this temperate region. Maps, charts, gross specimens and microscopic demonstrations dealing with fungous infections (histoplasmosis and madura foot), malaria, amebic dysentery, Rocky Mountain spotted fever, trichinelliasis, hookworm disease and pinworm infection are presented. (From the Section on Pathology and Physiology.)

J. RAMOS E SILVA, Escola de Medicina e Cirurgia, Rio de Janeiro, Brazil:

Brazilian Dermatoses: Exhibit showing photographs of leishmaniasis, yaws, leprosy, brazilian blastomycosis, scabies crustosa and South American pemphigus foliaceus. (From the Section on Dermatology and Syphilology.)

R. H. RIGDON, University of Arkansas School of Medicine, Little Rock, Ark.

Pathologic Lesions Occurring in Human and Experimental Malaria: Exhibit showing the pathologic lesions in monkeys infected with Plasmodium lophurae. The relationship of these pathologic changes to those occurring in a child dying of Plasmodium falciparum malaria is emphasized. The pathologic changes observed in the experimental studies and those in a human case suggest that a rapidly developing anemia may play a significant role in death as observed in the acute type of malarial infection. The majority of the material included in this exhibit was obtained during the time the exhibitor was a member of the Department of Pathology at the University of Tennessee. (From the Section on Pathology and Physiology.)

AIMEE WILCOX, Malaria Investigations, United States Public Health Service, Memphis, Tenn., and JOSEPH M. LUBITZ, United States Marine Hospital, Chicago:

Malaria, Laboratory Diagnosis: Exhibit outlining the various methods of laboratory diagnosis and stressing those which are of particular value to the general practitioner. Emphasis is placed on the thick and thin smears, their value and interpretation. The proper method of preparing the thick and thin smears is given. Representative parasites of the various species are shown. (From the Section on Pathology and Physiology.)

J. LYELL CLARKE, Des Plaines Valley Mosquito Abatement District, Lyons, Ill.:

Modern Methods of Mosquito Control: Exhibit showing (1) disease carrying mosquitoes; 3,000 live specimens swarming in breeding cabinet, mounted specimens for examination and paraphernalia for handling mosquitoes while testing their disease carrying potentialities; (2) modern mosquito control; pictures of actual field operations showing marsh buggies, water craft and other special machinery for modern speedy application of larvicides and insecticides; (3) biologic control of mosquitoes; use of natural enemies of the mosquito to supplement customary control methods. (From the Section on Preventive and Industrial Medicine and Public Health.)

SECTION EXHIBITS

Groups of exhibits dealing with the various specialties of medicine have been arranged by each of the sixteen sections of the Scientific Assembly.

Section on Practice of Medicine

The representative to the Scientific Exhibit from the Section on Practice of Medicine is Thomas C. Garrett, Philadelphia.

KURT LANGE and LINN J. BOYD, New York Medical College, New York:

Use of Fluorescein to Determine the Adequacy of Circulation: Exhibit showing that fluorescein can be used diagnostically in peripheral vascular diseases to determine the necessity for amputation after sudden occlusive vascular accidents, to establish the lowest safe level of amputation, to determine the status of the peripheral circulation, to estimate the tendency of various leg ulcers to heal, to predetermine the vascularity of skin flaps in plastic surgery and to ascertain the earliest possible moment for safe division of tubular flaps from their pedicles. It can be employed to determine immediately the viability of a previously strangulated loop of intestine. The exhibit shows the use of the method in simply and accurately determining photoelectrically the capillary permeability, the fact that this permeability is greatly increased in myxedema and returns to normal with thyroid therapy.

H. T. ENGELHARDT and V. J. DERBES, Tulane University School of Medicine, New Orleans:

The Heart in the Asthmatic Child: Exhibit showing (1) the roentgenograms of chests of children who have had bronchial asthma for an average of 4.1 years, the important points in the history and physical examination and the results of the allergic survey and fluoroscopic examination; (2) tables of prediction formulas for the transverse diameter of the heart using height and weight, and prediction formulas for the transverse diameter of the heart using the cardiothoracic ratio; (3) the results of electrocardiograms consisting of standard and chest leads, together with introductory and closing remarks.

GEORGE BURCH and TRAVIS WINSOR, Tulane University School of Medicine, New Orleans:

Clinical Applications of the Phlebomanometer: Exhibit showing the clinical use of the phlebomanometer, a new direct method for measuring venous pressure, and describing the value of venous pressure in the study of heart disease, mediastinal disease, edema and diseases of the veins and other blood vessels by means of charts and diagrams.

WALTER KEMPNER, Duke University School of Medicine, Durham, N. C.:

Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet: Exhibit showing that a rice-fruit-sugar diet has proved to be beneficial to the majority of patients treated for acute or chronic kidney disease or hypertensive vascular disease. Blood pressure, nonprotein nitrogen, cholesterol decreased, and the angle of the electrical axis of the heart increased. Flat, diphasic, inverted T_1 waves became more upright, heart became smaller and retinal hemorrhages, exudates and papilledema disappeared. Summary of these effects and those on urinary chloride and nitrogen excretion, plasma proteins and hemoglobin, as well as the effects on individual patients together with photographs of eyegrounds, electrocardiograms and chest films.

J. LOUIS NEFF and CLARENCE C. LITTLE, American Society for the Control of Cancer, New York:

Cancer Is Curable: Exhibit dramatizing under the motto "The general practitioner usually sees the cancer patient first" the importance of early diagnosis and adequate treatment in determining the cure rate of cancer. It presents a few simple office procedures which, if followed by the family physician, will result in the detection of many cases of cancer which are susceptible of cure.

ELLIOTT P. JOSLIN, HOWARD F. ROOT, PRISCILLA WHITE, C. CABELL BAILEY, ROBERT W. HYDE, Major, M. C., A. U. S., and HARRY BLOTNER, George F. Baker Clinic, New England Deaconess Hospital, Boston:

Diabetes Today: Exhibit presenting new data in the fields of (1) experimental alloxan diabetes, its pathology, physiology and clinical features; (2) statistical studies of childhood diabetes and vascular disease in young diabetic patients; (3) treatment of and prevention of needless deaths in diabetic coma; (4) pregnancy in diabetic women; (5) respiratory metabolism in relation to treatment; (6) The Diabetic Fund; (7) diabetes in men of service age.

LOUIS R. LIMARZI, JEROME T. PAUL and HENRY G. PONCHER, University of Illinois College of Medicine, Chicago:

Sternal Marrow Studies: Exhibit of bone marrow studies, both clinical and experimental, performed during life. The

several methods used in studying bone marrow are illustrated, and the advantage of a concentration method of preparing and studying bone marrow because of its quantitative and qualitative value is demonstrated. A selected group of bone marrow patterns from a study of over 2,450 sternal examinations are illustrated and include the several types of macrocytic, normocytic and microcytic anemias; bizarre erythropoiesis; typical and atypical types of leukemia; thrombocytopenic purpura illustrating normal and pathologic megakaryogenesis, and unusual bone marrows such as histoplasmosis of Darling, malaria, multiple myeloma, chloroleukemia, hypoplastic anemia and infectious mononucleosis. The bone marrow pattern in Banti's symptom complex, the effect of the sulfonamide drugs and the several types of marrow patterns observed during pregnancy are illustrated. Experimental studies include the effect of arsenic on erythropoiesis in normal and pathologic states.

JOHN S. LADUE, University of Minnesota, Minneapolis, and Louisiana State University, New Orleans:

Intravenous Use of Cardiac Glycosides: A Study of the Therapeutic Value, Toxicity and Effect on the Failing Human Heart in Terms of Its Size, Output and Mechanical Efficiency: Exhibit comparing the response of two series of patients with congestive heart failure associated with regular sinus rhythm to oral and intravenous administration of lanatoside C. Daily recordings of venous pressure, circulation time, weight and fluid intake and output are presented. Comparable groups are analyzed. It is shown that cardiac glycosides are almost equally effective in heart failure with auricular fibrillation or regular sinus rhythm. Data on 10 patients show changes in heart size, cardiac output (roentgenkymographic method of Keys and Friedell) and mechanical efficiency two hours after intravenous administration of lanatoside C. Studies on the intravenous digitalization of patients who developed congestive heart failure while taking maintenance doses of digitalis are given. An explanation of the mechanism of compensation of the failing heart in response to the intravenous administration of cardiac glycosides is suggested.

JOHN W. TOWEY, CHESTER S. KOOP, MARION SPRICK and HARRIET HOLLON, Pinecrest Sanatorium and Branch Laboratory, Michigan Department of Health, Powers, Mich.:

Evaluation of Laboratory Procedures in the Diagnosis of Pulmonary Tuberculosis: Exhibit presenting a study of 120 patients with a clinical diagnosis of pulmonary tuberculosis and negative routine slide examinations. An attempt to determine the relative value of laboratory procedures, i. e. the direct smear, concentrate of seven day sputums and gastric aspiration in detecting Mycobacterium tuberculosis has been made.

Section on Surgery, General and Abdominal

The representative to the Scientific Exhibit from the Section on Surgery, General and Abdominal, is Grover C. Penberthy, Colonel, M. C., A. U. S.

LYMAN WEEKS CROSSMAN and FREDERICK M. ALLEN, City Hospital, New York:

Refrigeration for Surgical Procedures and Tissue Conservation: Exhibit showing examples and results of refrigeration for various operative procedures, together with advantages for embolism, burns, frostbite and other treatments, including influence on shock. (Motion picture in the Casino, Morrison Hotel.)

OTTO F. KAMPMEIER and A. R. COOPER, University of Illinois College of Medicine, Chicago:

Frontal Sections of the Human Head and Neck: Exhibit of a series of ten sections of the young adult human head and neck, cut symmetrically in the frontal plane. An outline figure, on which each structure is indicated and labeled, accompanies each specimen.

ARTHUR E. HERTZLER, Halstead Hospital, Halstead, Kan.:

Wound Healing: Exhibit showing results and conclusions of ten years' research on wound healing, chiefly on peritoneum in dog and man. First and second intention healing is defined and illustrated, and temporary and permanent adhesion formation shown by a series of models made from actual cases.

ARNOLD S. JACKSON, JAMES A. JACKSON and A. M. SCHWITTAY, Jackson Clinic, Madison, Wis.:

Diseases of the Gynecologic System: Exhibit illustrating gynecologic anatomy, diseases of the uterus, ovaries and fallopian tubes; a case of cesarean section followed by abdominal hysterectomy and fibroma of ovary with hydrothorax.

DAVID WOOLFOLK BARROW, Lieutenant Colonel, M. C., A. U. S., Lexington, Ky., and HARMON T. RHOADS JR., Captain, M. C., A. U. S., New York.

Blast Injury: Exhibit presenting a study of 200 persons subject to blast injury, of whom 17 were killed. Blast injury was associated with characteristic clinical findings, which consisted of decreased psychomotor activity, lethargy, hypotension, bradycardia and slow respiration as well as damage to eyes and ears. Therapeutic measures are discussed.

J. ROSS VEAL and HUGH H. HUSSEY, Georgetown University School of Medicine, Washington, D. C.:

Surgery of Thrombosis of Peripheral Veins: Exhibit showing the classification, pathology and etiology of various types of peripheral venous thromboses; differential diagnosis and method of treatment of each type are included with results (immediate and late) technic and value of venography.

LEON J. ARIES, Northwestern University Medical School, Chicago:

Experiments in Bone Growth: Exhibit showing experimental studies of bone growth and grafts with effect of vital staining with alizarin dye. The pattern of bone growth in long bones is demonstrated. The effect of alizarin on onlay and inlay bone grafts. Studies in measurement of bone growth by the vital staining with alizarin in rats.

CHARLES S. WHITE, JACOB J. WEINSTEIN and J. LLOYD COLLINS, George Washington Medical School and Gallinger Hospital, Washington, D. C.:

Protein Metabolism and the Use of Protein Digest in Surgery; Preparation of Plasma by Sedimentation by a New Method: Exhibit showing the incidence of hypoproteinemia, its mechanism and associated clinical manifestation in relation to surgical cases, together with the effect of protein digest intravenously, orally and subcutaneously on blood protein levels and nitrogen metabolism.

CONRAD R. LAM and BROCK E. BRUSH, Henry Ford Hospital, Detroit:

Bronchiectasis: Diagnosis and Surgical Treatment: Exhibit outlining the usual clinical course of bronchiectasis and the important points in diagnosis. Visualization of the bronchi is stressed, and informative films are presented. A model of the brohchial tree is used to show the various shadows obtained when the subject is in different positions during roentgenography. The efficacy of surgical treatment (lobectomy) is demonstrated. Important steps in the modern operation of lobectomy by the individual ligation technic are shown.

KEITH S. GRIMSON, Duke University, Durham, N. C.:

Paravertebral Sympathectomy for Hypertension: Exhibit presenting four correlated groups. The first represents the understanding of the etiologic factors present in hypertension and the deductions that have led the author to perform complete paravertebral sympathectomy rather than splanchnicectomy on most patients and that have offered encouragement to surgical treatment. The second represents an illustration of the surgical procedure together with illustration-demonstration of some limitation by nerve regeneration and also an anatomic dissection placed in a lighted cabinet in the center of the exhibit floor. The third represents the operative mortality and the effect of the operation on blood pressure on all patients. The fourth

group represents a control series of thoracolumbar splanchnicectomies. The conclusion is that paravertebral sympathectomy proposed because of extensive physiologic studies is more effective than the conventional splanchnicectomy.

Section on Obstetrics and Gynecology

The representative to the Scientific Exhibit from the Section on Obstetrics and Gynecology is Frederick H. Falls, Chicago.

FREDERICK H. FALLS and CHARLOTTE S. HOLT, University of Illinois College of Medicine and State Department of Public Health, Chicago:

Obstetric Hemorrhages; Placenta Previa, Premature Detachment, Postpartum and Miscellaneous: Exhibit dealing with "obstetric hemorrhages" in all phases, stressing principally placenta previa, premature detachment, abortion, postpartum hemorrhages, ectopic pregnancy and miscellaneous hemorrhages. Each main subject is considered from the standpoint of etiology, pathology, diagnosis and treatment. Standard procedures for combating hemorrhage are depicted.

GEORGE N. PAPANICOLAOU, HERBERT F. TRAUT and ANDREW A. MARCHETTI, Cornell University Medical College, New York, and JOE V. MEIGS, MAURICE FREMONT-SMITH, RUTH M. GRAHAM, ISRAEL KAPNICK and LOIS T. JANZEN, Harvard Medical School, Massachusetts General Hospital, Boston:

The Vaginal Smear in the Diagnosis of Cancer: Exhibit demonstrating the value of the study of vaginal smears in the diagnosis of cancer of the cervix and body of the uterus and demonstrations of how the smears are made and stained.

A. R. ABARBANEL, George Washington University School of Medicine, Washington, D. C., and HOWARD F. KANE, Commander (MC), U.S.N.R., Washington, D. C.:

Pharmacodynamic Studies of the Human Gravid Uterus by Means of External Hysterography: Patterns of uterine motility have been studied under normal and experimental conditions. The following points are emphasized: 1. Responses to various oxytocics, including posterior pituitary injection, pitressin, pitocin, quinine and ergonovine. 2. The effect of magnesium ion on these responses, especially its immediate relaxing effect on uterine tetany. The clinical implications of this phenomenon are especially stressed. 3. The effect of calcium on these responses, in particular its sensitization (1-2 action) of the uterus to subsequent oxytocics. 4. Pathway and rate of conduction of the contraction wave, demonstrating its peristalsis-like character.

HOWARD C. MOLOY, Columbia University College of Physicians and Surgeons and Sloane Hospital for Women, New York:

Pelvic Model Manikins Reproducing the Caldwell-Moloy Classification of Female Pelves: Exhibit showing representative examples of fourteen pelvic types selected from T. Wingate Todd's well known skeletal collection in the Department of Anatomy, Western Reserve University, a typical male pelvis and a typical asymmetrical pelvis. Durable plastic replicas of these sixteen pelves have been made and mounted on a metal base by a U shaped support, which permits a study of the morphology of each pelvis and, by adjustment, the model can be converted into a manikin. As a manikin the influence of pelvic shape on head position, manual and forceps mechanism can be demonstrated efficiently.

CATHARINE MACFARLANE, MARGARET C. STURGIS and FAITH S. FETTERMAN, Woman's Medical College of Pennsylvania, Philadelphia:

Periodic Pelvic Examinations in the Control of Cancer of the Uterus: Exhibit summarizing the pelvic findings in 1,000 theoretically well women 30-80 years of age examined twice a year for five years; models of the uterine cervix in health and disease viewed through vaginal speculums; models illustrating the diseased cervix before and after treatment.

BENJAMIN S. KLINE, Mount Sinai Hospital, Cleveland:

Salmon, Geist, Salmon, Frank Six Hour Rat Test for Pregnancy: Exhibit showing technic of test with results in over 1,000 animals; chart of cases checked by Friedman test and by operation; photographs of animals and of positive and negative reactions; outline of method for obtaining rats 47 to 55 Gm. by the 22d to 25th day which are preferable to rats 34-45 Gm. (22-25 days old). This test was found reliable, much simpler in performance than the Friedman test, and because it requires but six hours it is more valuable for hospital practice.

MALCOLM B. DOCKERTY, Mayo Clinic, Rochester, Minn.:

Certain Types of Uterine Neoplasms: Exhibit demonstrating, by means of colored wax models of selected specimens, certain types of uterine neoplasms. Each specimen is accompanied by a brief description of its outstanding characteristics and a photomicrograph of its histologic appearance.

RICHARD TORPIN, University of Georgia School of Medicine, Augusta, Ga.:

Bisected Human Pregnant Uteri: Exhibit of drawings all made exactly to scale with exact dimensions. They range from 5 millimeter long fetus to full term, including one placenta previa centralis nearly full term, one full term ovarian pregnancy and one 4 months interstitial pregnancy.

Section on Ophthalmology

The section exhibit committee of the Section on Ophthalmology consists of Georgiana D. Theobald, Oak Park, Ill., chairman; Derrick Vail, Lieutenant Colonel, M. C., A. U. S., and A. B. Reese, New York.

J. Q. GRIFFITH JR., and WILFRED E. FRY, University of Pennsylvania, Philadelphia:

Papilledema; Mechanism and Clinical Applications: Exhibit illustrating a series of experiments in which papilledema was produced in laboratory animals under carefully controlled conditions. These experiments support the following hypothesis: Papilledema results when pressure is exerted on the central vein of the retina where it traverses the perineural optic space. Under normal conditions the perineural optic space is continuous with the subarachnoid space, and any condition causing increased pressure in the cerebrospinal fluid will cause papilledema. However, if for any reason the perineural optic space is blocked and is not continuous with the subarachnoid space, increased pressure in the cerebrospinal fluid will not cause papilledema. Various pathologic states are reviewed, including brain tumor, brain abscess, subarachnoid hemorrhage, meningitis of bacterial origin, encephalitis, hydrocephalus, sinus thrombosis, intracranial aneurysm, cerebral trauma, congenital malformations and hypertension.

CHARLES WEISS and FRANK H. RODIN, Mount Zion Hospital, San Francisco:

Laboratory Aids in the Diagnosis of Infections of the Eye, with Special Reference to Those Occurring in Tropical and Subtropical Countries: Exhibit showing photographs and colored plates of diseases of the eye together with the corresponding bacteria, fungi, parasites and inclusion bodies. Laboratory methods are presented which are of aid in the diagnosis of infections of the eye, and charts and maps which show their geographic distribution throughout the tropical and subtropical world are included.

Section on Laryngology, Otology and Rhinology

The representative to the Scientific Exhibit from the Section on Laryngology, Otology and Rhinology is Paul H. Holinger, Chicago.

J. R. LINDSAY, The University of Chicago, Chicago:

Ménière's Disease: Exhibit demonstrating the pathologic changes in the inner ear and characteristic auditory findings in this disease.

H. B. PERLMAN, The University of Chicago, Chicago:

Eye Movements: Exhibit demonstrating the electrical potentials (retinocorneal) of the various types of normal and pathologic eye movements.

O. E. VAN ALYEA, University of Illinois College of Medicine, Chicago:

Treatment of Acute Infections of the Nose and Sinuses: Exhibit showing that treatment of acute nasal and sinus infections is undergoing constant change at the present time and improved methods are being adopted from time to time to conform to ever increasing knowledge of nasal physiology and the histopathology of respiratory mucosa. Modern medical and surgical procedures are described and the basis for these procedures is presented.

A. C. HILDING, Duluth, Minn.:

Production of Negative Pressure in Respiratory Tract by Ciliary Action—Probable Relation to Postoperative Atelectasis: Exhibit demonstrating negative pressure produced experimentally in the lower air passages and sinuses by normal ciliary action in the presence of abnormally great quantities of mucus. Normal ciliary action seems to be one important factor in the production and maintenance of postoperative atelectasis.

CHEVALIER L. JACKSON, JOHN FRANKLIN HUBER and CHARLES M. NORRIS, Temple University Hospital, Philadelphia:

Applied Anatomy of the Bronchi and Lungs: Exhibit showing clinical demonstration by means of roentgenograms as well as bronchoscopic views of the practical application of anatomic knowledge to the interpretation of both roentgen and bronchoscopic findings. A simple nomenclature quickly learned and easily remembered is used.

A. R. HOLLENDER and HANS BRUNNER, University of Illinois College of Medicine, Chicago, and PAUL B. SZANTO, Chicago and Kankakee State Hospitals:

The Nasopharynx—Anatomic, Pathologic and Clinical Aspects: Exhibit showing the anatomy with diagrams, drawings and actual specimens; the pathology with gross specimens and photomicrographs, and the clinical aspects with drawings of diagnostic and therapeutic technic.

Section on Pediatrics

The representative to the Scientific Exhibit from the Section on Pediatrics is Sterling H. Ashmun, Dayton, Ohio.

I. P. BRONSTEIN, University of Illinois College of Medicine, Chicago:

Pediatric Endocrinopathies: Exhibit of clinical observations demonstrating disturbances of weight, stature and the sexual apparatus encountered in pediatric practice. In obesity emphasis is placed on the correction taking place in the puberal period without the aid of glandular products. In the dwarfish group interesting case histories are presented; the effect of growth hormone is noted. In the sexual group the part played by the hypothalmic-hypophysial apparatus in precocity is stressed.

ETHEL C. DUNHAM, Children's Bureau, United States Department of Labor, Washington, D. C.:

Hospital Nursery Unit for Newborn Infants: Exhibit of a model, developed by the Children's Bureau, United States Department of Labor, and the Hospital Facilities Section, United States Public Health Service, showing a complete hospital nursery unit for newborn infants, including a nursery for full-term infants, nursery for premature infants, nursery for infants suspected of being ill, a nurses' station, and nurses' charting and work space.

I. J. WOLF, Barnert Memorial Hospital; Paterson Board of Health, Paterson, N. J.:

Prevention and Treatment of Rickets with Single Massive Doses of Vitamin D: Exhibit showing (1) the use of single massive doses of vitamin D (600,000 units) for the treatment of active rickets; (2) the use of single massive doses of vitamin D for the prevention of rickets; (3) the safety of single massive doses of vitamin D in the prevention and treatment of rickets in infants.

D. B. ARMSTRONG and GEORGE M. WHEATLEY, Metropolitan Life Insurance Company, New York:

Rheumatic Fever in Young Hearts: Exhibit of a series of charts showing the prevalence and trends of rheumatic fever at the younger ages; statistical data on factors in the etiology and spread of the disease; data on the prognosis of the disease based on the continuous follow-up of nearly 3,000 children after an attack of rheumatic fever.

Section on Experimental Medicine and Therapeutics

The representative to the Scientific Exhibit from the Section on Experimental Medicine and Therapeutics is Robert W. Wilkins, Boston.

HARRY GOLD and MCKEEN CATTELL, Cornell University Medical College, New York:

Recent Developments in Digitalis: Exhibit illustrating various aspects of recent developments in our knowledge of digitalis materials in animals and man. It deals with such matters as the mechanism of digitalis action, the various methods of assay including the cat and man, dosage, absorption and comparison of various glycosides.

WILLIAM H. FELDMAN, H. CORWIN HINSHAW and FRANK C. MANN, Mayo Foundation, Rochester, Minn.:

Chemotherapy of Tuberculosis: Exhibit showing the progress achieved in the chemotherapeutic attack on tuberculosis during the past five years. Subject matter is divided essentially into three parts: (*a*) the chemistry of noneffective and effective compounds assayed in vivo; (*b*) significant evidence of the efficacy of certain compounds in exerting a favorable influence on the expected course of inoculation tuberculosis in the highly susceptible guinea pig; (*c*) a consideration of the present status and future possibilities of chemotherapy in clinical tuberculosis.

KARL A. MEYER, DONALD D. KOZOLL, BRUNO W. VOLK, FREDERICK STEIGMANN and HANS POPPER, Hektoen Institute for Medical Research of the Cook County Hospital and Cook County Graduate School of Medicine, Chicago:

Plasma Substitutes in the Treatment of Shock: Exhibit showing the treatment of shock and the part which the different plasma substitutes may play in it, regarding the raising of the circulating plasma volume and regarding protein nutrition in the postshock state. The advantages and disadvantages of the administration of gelatin and pectin solutions are demonstrated, based on clinical studies in patients in shock and not in shock, on microscopic studies of human organs and on animal experiments. The results following the administration of plasma substitutes are compared with those after plasma and crystalloid solutions. The results obtained from the parenteral administration of protein preparations as nutrients are presented.

RALPH M. TANDOWSKY, College of Medical Evangelists, Los Angeles:

Treatment of Congestive Heart Failure with Special Reference to Lanatoside C: Exhibit showing the effect of lanatoside C, a chemically pure digitalis glycoside, in normal subjects and in patients with congestive heart failure; statistical charts showing the advantages of the chemically pure digitalis glycoside over ordinary digitalis, especially in connection with rapidity of action, tolerance and changes in the RS-T and T waves. A discussion of the chemistry and pharmacology of lanatoside C is included.

HENRY TURKEL and FRANK H. BETHELL, University of Michigan, Simpson Memorial Institute, Ann Arbor, Mich.:

Biopsy of Bone Marrow and Intramedullary Administration of Fluids Performed by a New Instrument: Exhibit showing a new instrument, consisting of two needles with stylets, an

outer guiding needle of 14 gage and an inner trephine needle of 17 gage. By means of this device a small plug of bone marrow may be obtained with technical ease and a minimum of discomfort to the patient. The material is suitable for fixation and sectioning or imprints may be made with it. If desired, aspiration of marrow may be performed immediately after the removal of the trephine specimen. For intramedullary administration of blood and other fluids the outer needle is pushed into the opening in the bone which remains when the inner or cutting needle is removed carrying with it the plug of bone and marrow. Thus there is no obstruction to the free flow of the infusion fluid.

DAVID LEHR, New York Medical College, New York:

Experimental and Clinical Studies with Three Sulfonamides: Exhibit showing (1) comparative absorption, excretion and toxicity of sulfacetimide, sulfadiazine and sulfanilamide after oral and intraperitoneal administration, with special consideration of the relationship of the sulfonamide levels in blood and urine (a study in men and animals); (2) prevention, sequelae and therapy of experimental renal obstruction from sulfadiazine. An evaluation of clinical measures (forcing of fluids and alkalization) and of some new therapeutic approaches carried out under the standard conditions of the animal experiment.

S. G. TAYLOR III, University of Illinois College of Medicine, HOWARD L. ALT, Northwestern University Medical School, and SIDNEY O. LEVINSON, Samuel Deutsch Serum Center of Michael Reese Hospital, Chicago:

Red Cell Suspension Transfusions: Viscose Tubing for Their Administration: Exhibit demonstrating apparatus and technic for the giving of red cell transfusions, including the use of viscose tubing; charts and graphs showing results of red cell transfusions in a large series of cases; advantages of red cell over whole blood transfusions will be outlined.

CYRIL M. MACBRYDE, HAROLD K. ROBERTS and ROBERT REISS, Washington University School of Medicine, St. Louis:

Modified Protamine Zinc Insulin: Exhibit illustrating comparative action of various types of modified insulin, including standard protamine insulin, histone insulin, globin insulin, clear protamine zinc insulin and a special modified protamine zinc insulin with which the results are superior to those obtained with any of the other modifications. Reports of case studies on individual diabetic patients and summaries of results on groups of patients.

ROBERT H. WILLIAMS, Harvard Medical School and Boston City Hospital, Boston:

Thiouracil in Thyrotoxicosis: Exhibit illustrating the response to thiouracil treatment in the basal metabolic rate, protein-bound iodine, and in the clinical course of thyrotoxicosis. The rate of its absorption from the gastrointestinal tract, distribution throughout the body, its fate in the body, and the rate of excretion in the urine and stools is demonstrated. The site of action of thiouracil is shown. The course of patients receiving potassium iodide, before or during thiouracil therapy, is illustrated. Factors affecting the storage of thiouracil in the thyroid; the effects of thiouracil on the thyroxin content of the thyroid, and its effects on the histology of the glands are brought out. Great stress will be placed on the use of thiouracil in the medical and surgical treatment of thyrotoxicosis as concerns not only the effectiveness of the drug but also the complications arising from its use.

Section on Pathology and Physiology

The representative to the Scientific Exhibit from the Section on Pathology and Physiology is Frank W. Konzelmann, Philadelphia. In addition to the exhibits listed here, several other exhibits from this section will be found in the Tropical Medicine Group.

PAUL N. HARRIS and K. K. CHEN, the Lilly Research Laboratories, Indianapolis:

Experimental Liver Injury: Exhibit illustrating hepatic injury produced by (1) administration of 14 pure alkaloids derived from plants of the genera Senecio, Heliotropium and Crotalaria and by feeding seeds of Amsinkia horizontalis; ingestion of these plants and seeds is known to produce hepatic cirrhosis in live stock; (2) *p*-dimethylaminoazobenzene, or "butter yellow"; the effect of diet on development of cancer and cirrhosis is also shown; (3) a miscellaneous group of substances including tannic acid, carbon tetrachloride, diethylene glycol and high cystine diet; these are included for comparison with other lesions.

A. J. NEDZEL, University of Illinois College of Medicine, Chicago:

Initial Changes in Heart Valves (Human and Dogs): Photomicrographs present some endothelial changes of the mitral valves in persons who died suddenly (violent death) in presumably healthy state and mostly of the young and middle age persons. The findings are compared with the material collected previously in dogs in which the development of the endocarditis has been studied. An additional group of photographs presents some macroscopic changes in dogs' heart valves (mitral and tricuspidal) which were found immediately after putting the animals to death. Some of these dogs were subjected to various manipulations shortly before they were killed. An attempt is made to show that the initial changes in the heart valves, which predispose to the localization of floating in blood stream bacteria and eventually may lead to the development of bacterial endocarditis, are often present in presumably normal persons.

HELEN INGLEBY, Woman's Medical College of Pennsylvania, Philadelphia:

Normal and Pathologic Growth in the Breast: Exhibit showing the growth of the breast at puberty, the menstrual cycle, the relation of normal growth to cystic disease of the breast and the relation of cystic disease to carcinoma.

F. P. MCNAMARA, Finley and Mercy Hospitals, Dubuque, Iowa:

Necropsy Records: Their Use in Informal Postgraduate Education: Exhibit showing over 900 necropsy records and photographs of some of the more interesting specimens. It indicates how clinical records and necropsy reports can be utilized in clinicopathologic conferences as a method of informal postgraduate education. Reprints will be exhibited to show the scope and character of this work in a 100 bed hospital.

ARMAND J. QUICK, Marquette University School of Medicine, Milwaukee:

Determination of Prothrombin: Exhibit showing (1) the newer information concerning the constitution of prothrombin, an explanation of the chemistry of its determination in the blood and an outline of its variations in different clinical conditions including dicumarol hypoprothrombinemia, (2) a practical demonstration of the "prothrombin time test" on human plasma and (3) a display of the apparatus needed for the performance of the test and for the preparation of the required reagents.

OTAKAR J. POLLAK, Taunton State Hospital, Taunton, Mass.:

A Rapid Trichrome Stain: Exhibit showing the use of a simple trichrome stain. This mixture, applied for three minutes as counterstain to hematoxylin, gives excellent differentiation of tissues and is especially suitable as a connective tissue, fibrin and elastica stain.

K. G. KHOROZIAN, Pineville, W. Va.:

Microkaryocytes, the Fourth Corpuscular Elements of the Blood and Tissues: Exhibit presenting: 1. A demonstration of the cells in tissues, with newer concept about the internal structures of cells; demonstration of the cells in human erythrocytes. 2. Characteristics of the cells; brownian movement, diapedesis, infiltration capacity. 3. Functions of the cells; union and dissemination of arsenic by the cells into intercellular and intracellular structures of different organs. Microscopic slide method of demonstration of the anastomosis of hepatic arterial and portal venous systems around individual hepatic cells; union and dissemination of intramuscularly given bismuth by the cells, especially at the site of injection and in the hepatic tissue;

method of excretion of arsenic and bismuth into intestinal canal and reabsorption by microkaryocytes into portal system and carriage into individual hepatic cell; physiologic basis of arsenic and bismuth jaundice. 4. Clinical application of the experimental observation that microkaryocytes are the disseminators of therapeutically given bismuth; human biopsy; demonstration of therapeutically given bismuth in human syphilitic placenta.

JULIUS S. WEINGART, Iowa Lutheran Hospital, Des Moines, Iowa:

Stereoscopic Photography of Pathologic Specimens: Exhibit demonstrating the proper method of taking stereoscopic photographs and the superiority of these for recording the anatomic structure and tissue texture of pathologic specimens. Many of the photographs are in color as well, which gives a very lifelike representation. The value of such records in the teaching of pathology is stressed by the exhibit.

S. E. GOULD, Eloise Hospital, Eloise, Mich.:

Diagnostic Methods in Trichinosis: Exhibit illustrating the various laboratory diagnostic methods in trichinosis. The projection of live trichina larvae on the screen by means of a microvivarium will be demonstrated.

Section on Nervous and Mental Diseases

The representative to the Scientific Exhibit from the Section on Nervous and Mental Diseases is F. P. Moersch, Rochester, Minn.

NORMAN R. SHULACK, Major, M. C., A. U. S., Station Hospital, Fort Benning, Georgia:

Treatment Methods in a Neuropsychiatric Section of an Army Station Hospital: Exhibit illustrating modern methods used to receive, rehabilitate, catharte, return to duty or otherwise dispose of acute neuropsychiatric casualties by means of group and individual psychotherapy, occupational, recreational, educational and religious programs, chemical methods such as sedation, subnarcosis and induced convulsions, and by other methods, including physical therapy, hydrotherapy and parenteral feedings.

FRANCIS C. GRANT, Neurosurgical Service Hospital and Graduate Hospital, University of Pennsylvania, Philadelphia:

Lesions of the Brain and Spinal Cord: Exhibit showing all varieties of neurosurgical lesions; examples of tumors of the brain and spinal cord and the neurosurgical technic necessary to remove such lesions; examples of the results of cranial trauma, compound fractures of the skull, acute and chronic hemorrhage, brain abscess and craniocerebral scar.

R. W. WAGGONER and K. LOWENBERG-SCHARENBERG, University Hospital, Ann Arbor, Mich.:

Pathology of Nervous and Mental Disorders: Exhibit consists of gross specimens and mounted coronal and horizontal sections of the brain (Weigert & Nissl preparations). Photographs of the brain showing various types of disorders and of genetic charts. Disorders of particular interest to practitioners, such as brain tumors, are illustrated.

E. S. GURDJIAN and JOHN E. WEBSTER, Major, M. C., A. U. S., Wayne University College of Medicine and Grace Hospital, Detroit:

Traumatic Intracranial Hemorrhage: Exhibit presenting a pictorial discussion of epidural hemorrhage, acute and chronic subdural hemorrhage, massive intracranial hemorrhage and subdural collection of spinal fluid. Pathology, diagnostic criteria and operative technic are shown. (Motion picture in the Casino, Morrison Hotel.)

Section on Dermatology and Syphilology

The representative to the Scientific Exhibit from the Section on Dermatology and Syphilology is Hamilton Montgomery, Rochester, Minn. In addition to the exhibit listed here, other exhibits from this section will be found in the Tropical Medicine Group.

HERMAN N. BUNDESEN, Chicago Health Department, Chicago:

Chicago Venereal Disease Control Program: Exhibit showing the organizational setup, functions, activities and results of the Chicago Venereal Disease Control Program. A coordination of all activities as educational facilities, case finding, case holding and treatment is presented in relation to effective venereal disease control methods. The relationship of all phases of venereal disease control to intensive treatment and operation of the Chicago Intensive Treatment Center is included. Slides illustrating types and methods of intensive treatment at the Chicago Intensive Treatment Center are presented.

EVAN W. THOMAS, GERTRUDE WEXLER and BERNHARD DATTNER, Bellevue Hospital-New York University College of Medicine, New York:

Rapid Treatment of Early and Central Nervous System Syphilis: Exhibit describing the treatment and summarizing the reactions and results of treatment of about 2,000 cases of early syphilis and about 400 cases of active central nervous system syphilis. The prevention of late symptomatic syphilis will be stressed.

LEON GOLDMAN, JOSEPH B. HOMAN and NANCY BURNHAM, University of Cincinnati College of Medicine, Cincinnati:

Devices for Protection of the Skin: Exhibit illustrating many of the common devices for complete and partial protection of the skin, with emphasis on protection of the hands. Schematic representations of some of the chemical detector materials now available, and the relationship of chemical detectors to protection of the skin.

EDWARD A. OLIVER, Secretary, Committee on Occupational Dermatoses, Section on Dermatology and Syphilology, American Medical Association, Chicago:

Industrial Dermatoses, with Special Reference to Those Occurring in War Industries: Exhibit of photographs and charts illustrating the commoner industrial dermatoses.

LOUIS SCHWARTZ and NORMAN R. GOLDSMITH, United States Public Health Service, Bethesda, Md.:

Occupational Dermatitis in the War Industries: Exhibit showing how the war effort has resulted in an increase in the incidence and variety of industrial dermatoses. Certain problems are common to the manufacture of many articles, while others are specific to a particular industry or process. The principal dermatologic hazards with preventive measures are presented. Among the subjects included are dermatitis from cutting oils, solvents, munitions, explosives, chemical warfare agents, plastics, and special problems in shipbuilding, airplane manufacture and miscellaneous war industries.

C. W. EMMONS, National Institute of Health, United States Public Health Service, Bethesda, Md.:

Fungi of Dermatologic Importance: Exhibit presenting new and poorly known data concerning dermatophytes and the fungi of chromoblastomycosis, Madura foot and coccidioidomycosis.

Section on Preventive and Industrial Medicine and Public Health

The representative to the Scientific Exhibit from the Section on Preventive and Industrial Medicine and Public Health is Paul A. Davis, Akron, Ohio. In addition to the exhibits listed here, other exhibits from this section will be found in the Tropical Medicine Group.

O. A. SANDER and N. E. ENZER, Milwaukee:

Pulmonary Siderosis of Welders: Exhibit showing that a small percentage of electric arc welders, limited to those doing rather confined work, after eight to ten years may develop inert iron pigment deposits in the lymphatics of the lungs which can be visualized on chest roentgenograms as small discrete shadows somewhat resembling nodular silicosis. The term "siderosis" for

this iron pigmentation, therefore, excludes the concept of fibrous tissue proliferation. Moreover, it does not cause functional impairment of the lungs or increased susceptibility to tuberculosis or other infections. It can be prevented even with the most confined welding by means of adequate ventilation.

H. S. Van Ordstrand and Charles Robert Hughes, Cleveland Clinic, Cleveland; J. M. Denardi, Lorain, Ohio, and Morris G. Carmody, Painesville, Ohio:

Industrial Diseases in the Beryllium Industry: Exhibit demonstrating clinical and pathologic findings in workers processing beryllium from the raw ore. The demonstration shows respiratory, dermatologic and ocular manifestations. Chemical pneumonitis is emphasized, including material from 4 cases studied post mortem.

J. G. Townsend, Division of Industrial Hygiene, United States Public Health Service, Bethesda, Md.:

Industrial Hygiene Services in War Industries: Exhibit presenting field work of the Division of Industrial Hygiene, United States Public Health Service, illustrating the features of a survey of the health program in a plant making explosives. The functions of medical, engineering and chemical personnel are shown. Cooperative relationships of the United States Public Health Service, the states and other industrial agencies are represented by diagram.

R. R. Sayers, Bureau of Mines, United States Department of the Interior, Washington, D. C., and H. H. Schrenk, Bureau of Mines, Pittsburgh:

Hygiene of Dust in Air: Exhibit showing the amount of dust that can be safely breathed per day and per year over a prolonged period of time; photographs and diagrams illustrating the formation, dissemination, properties, determination and control of unhygienic particulate matter (dust, fumes, mists and fog) in air.

E. G. Meiter, Employers Mutual Liability Insurance Company of Wisconsin, Milwaukee:

Occupational Disease Hazards—Detection and Control: Exhibit featuring both medical and engineering methods for the control of health and safety of industrial workers, particularly those engaged in war industries. Medical control measures include representative physical examination forms covering the more common occupational diseases. Engineering control is illustrated by instruments and devices used for detecting and measuring the toxic agents in air. The equipment will be in operation showing the sampling procedure. Representative respiratory protective devices together with information regarding their respective field of use are included.

James Mallory Carlisle and William J. Reilly, Merck & Co., Inc., Rahway, N. J., and Harrison S. Martland, Newark, N. J.:

Industrial, Civil and War Injuries: Exhibit showing (1) casualties at Pearl Harbor, Bataan and Corregidor and the methods and conditions under which they were treated; (2) types of civil traumatic injuries which may also occur in military life, showing condition immediately following accident, progress of treatment and result; (3) industrial acid and alkaline chemical burns of the skin and eyes, including those caused by gases; (4) growth stages of the mold Penicillium notatum and the use of penicillin in treating burns and industrial injuries.

Robert Kehoe, Joseph Treon, William E. Crutchfield Jr. and Karl V. Kitzmiller, Kettering Laboratory of Applied Physiology, University of Cincinnati College of Medicine, Cincinnati:

Toxicology of Some Alicyclic Compounds: Exhibit giving (1) the lethal dosage of cyclohexane, cyclohexanol, cyclohexanone and their methyl derivatives, when administered orally and applied on the skin, (2) the toxic and innocuous concentrations of these materials in the form of vapor in air and (3) information concerning the metabolism and disposition of these compounds in the animal body.

Oren C. Durham, Abbott Laboratories, North Chicago, Ill.:

Newer Methods in Aerobiology as Applied to Allergy: Exhibit concerning studies in the quantitative exposure of the allergic individual to atmospheric allergens, consisting of recently developed and adapted aerobiologic apparatus for experimental determination of volumetric incidence of pollens, fungus spores and other air borne allergens; demonstration of technic of parallel gravity-volumetric tests; methods of interpretation and existing data secured by the gravity method; graphic results. Differentiation of pollen grains and simple methods for local pollen surveys are shown.

Howard J. Shaughnessy, Frances Friewer and Roland R. Cross, Director, Illinois Department of Public Health, Chicago and Springfield, Ill.:

Salmonellosis—A Public Health Problem: Exhibit of charts and drawings showing the sources of infection and means of dissemination of Salmonella types in man; charts and photographs showing clinical symptoms and case records; charts showing the distribution of types identified by the several laboratories in the United States; cabinet with laboratory equipment and material showing the procedures in the laboratory examination of the specimen.

C. F. Jordan, Iowa State Department of Health, Des Moines, Iowa; I. H. Borts, State Hygiene Laboratory, Iowa City, and S. H. McNutt, Iowa State College, Ames, Iowa:

Brucellosis: Exhibit showing the etiology; organisms of the Brucella group; pathology in animals and modes of transmission to man; epidemiologic aspects, including reported occurrence in the United States; distribution of cases according to age and sex, month of onset of illness and occupation; survey findings; symptomatology, complications; diagnosis; laboratory procedures; treatment; control and preventive measures.

Section on Urology

The representative to the Scientific Exhibit from the Section on Urology is John H. Morrissey, New York:

V. S. Counseller, Mayo Clinic, Rochester, Minn.:

Surgical and Postoperative Treatment of Vesicovaginal Fistulas: Exhibit demonstrating the surgical repair of various types of vesicovaginal fistulas. It shows types of vesicovaginal fistulas encountered and the importance of the relative position of the fistula to the (1) urethral sphincter, (2) ureteral meatus, (3) trigone, (4) fundus and (5) upper urinary tract. Proper postoperative care is emphasized.

Tobias Weinberg and Benjamin S. Abeshouse, Sinai Hospital, Baltimore:

Clinicopathologic Correlation of Renal Neoplasms: Exhibit analyzing the clinical manifestations and their relationship to the pathologic findings; selected cases presented depicting the gross and microscopic appearance of the neoplasms and pertinent data.

Milton Friedman, Major, M. C., A. U. S., and Lloyd G. Lewis, Lieutenant Colonel, M. C., A. U. S., Walter Reed General Hospital, Washington, D. C.:

An Improved Technic for the Treatment of Carcinoma of the Testis: Exhibit of 75 cases of carcinoma of the testis treated within the past two years at Walter Reed General Hospital. These were studied from the surgical and radiotherapeutic points of view. Various measured amounts of roentgen rays were first delivered to the tumor. The testis was then removed in order to study the histologic radiation effects and to determine whether the dose delivered was lethal to the tumor. This study indicated the amount of radiation which was to be delivered to the retroperitoneal nodes. A radical dissection of the retroperitoneal nodes was then performed for purposes of exploration, removal of nodes where feasible, location of the common channels of extension of the tumor and determination of the regions which were to receive postoperative irradiation. An improved technic of postoperative irradiation is described. These procedures yielded information which permitted intelligent treatment of the individual case.

Section on Orthopedic Surgery

The representative to the Scientific Exhibit from the Section on Orthopedic Surgery is Fremont A. Chandler, Chicago.

R. K. GHORMLEY, Mayo Clinic, Rochester, Minn.:

Pedicle Grafts to Deep Skin Defects of the Foot and Ankle: Exhibit showing (1) the surgical technic employed in pedicle grafts to deep skin defects of the foot and ankle; (2) typical results obtained.

JOHN J. FAHEY, Chicago:

Circulation of the Femoral Head: Gross anatomy is shown by dissected specimens. Microscopic sections of the femoral head and neck in growing children and adults show the relation of the circulation to the epiphysial cartilage plate and the epiphysis. A study of the circulation within the bone in full time stillbirths and adult hips is demonstrated by india ink injections and clearing.

J. E. M. THOMSON, University of Nebraska, Lincoln, Neb.:

Local Shock—A Vasomotor Phenomenon Occurring in Certain Severe Injuries of the Extremities: Exhibit showing the effect of procaine block of controlling sympathetics by transparencies of descriptive material gathered from research and clinical investigations with technic, microscopic slides and photomicrographs.

JOHN O. DIETERLE, Milwaukee:

Treatment of Fractures of Forearm, Hip, Os Calcis and Ankle Joint: 1. Single or double forearm fractures in the middle one third are often hard to reduce by closed methods. In this exhibit the technic of the open reduction method of Hey-Groves, utilizing beef bone intramedullary pegs, will be illustrated. 2. Fracture dislocations of the ankle joint involving the lower tibial articulation should be accurately reduced and maintained by combined internal and external fixation. The exhibit will show the author's method of maintaining reduction by the use of transfixing wires. 3. In this exhibit the method of maintaining reduction in intracapsular fractures of the hip by the use of Telson screws will be illustrated. The screws are introduced subcutaneously and without the use of any special apparatus. The procedure here shown is presented as one of the less complicated methods of treatment of hip fractures. 4. In the exhibit the apparatus used for skeletal traction in fractures is made on the necessity of restoring the contour of the os calcis as much as possible. Many of the important points in the treatment will be emphasized.

Section on Gastro-Enterology and Proctology

The representative to the Scientific Exhibit from the Section on Gastro-Enterology and Proctology is Grant H. Laing, Chicago:

J. A. ROTH, A. C. IVY and A. J. ATKINSON, Northwestern University Medical School, Chicago:

Effect of Caffeine on the Stomach: Exhibit showing peptic ulcers in cats with caffeine, gastric secretory response to caffeine and coffee in cats and normal human subjects; synergism of caffeine and histamine, and gastric secretory response to caffeine in ulcer patients.

MOSES EINHORN, New York:

Effective Treatment of Cardiospasm: Exhibit illustrating the study of 30 cases of cardiospasm, according to sex, age of onset, duration of the disease and cardinal symptoms elicited from their clinical histories. Photographs show types of cardiospasm, according to roentgen findings. The effects of the duration of the disease on the extent of esophageal dilatation are illustrated by diagrams. Highlights of effective treatment are explained by charts: (1) methods of removal of esophageal retention by means of continuous esophageal lavage; (2) principles of gastric feedings; (3) retrolateral traction dilation. The advantages of these methods and follow-up of the cases will be given.

LEO L. HARDT, ERNEST C. OLSON, JACK I. RABENS and A. R. HUFFORD, Illinois Central Hospital, Cook County Hospital and Municipal Tuberculosis Sanitarium, Chicago:

Gastroscopy as an Aid in Diagnosis: Exhibit showing roentgenograms and gastroscopic views with a summary of approximately 1,500 cases that have been examined in the past five years; demonstration of a new flexirigid gastroscope and new transformer to replace the battery or rheostat. (Motion picture in the Casino, Morrison Hotel.)

Section on Radiology

The representative to the Scientific Exhibit from the Section on Radiology is S. W. Donaldson, Ann Arbor, Mich.

HENRY K. TAYLOR, Goldwater Memorial Hospital, Welfare Island, N. Y.:

Bone Infarcts and Aseptic Necrosis: Bone infarcts and aseptic necrosis occurring in 14 caisson and 33 noncaisson workers. The caisson worker is subjected to changes in atmospheric pressure. Most caisson workers, not all, show bone and/or joint changes. Some admit to one or more attacks of the bends. Others, without bone or joint changes, admit to several attacks of the bends, or aeroembolism. The shaft and joint lesions do not develop immediately after aeroembolism. Considerable time must elapse. The shaft lesions are usually asymptomatic and discovered accidentally. The joint lesions develop secondary arthritic changes which ultimately present an appearance similar to a chronic hypertrophic osteoarthritis. The lesions in both groups present roentgenographic appearances which are similar and at times cannot be differentiated one from the other. In the caisson worker the etiologic factor is the inert gas nitrogen, in bubble formation, acting as an embolus, or pressure, or both, interfering with the circulation to the part. In the noncaisson worker there is no apparent etiologic factor, and the obstructing factor, or factors, is unknown. The bone lesions may be single. Usually they are multiple and often bilateral. Workers under compressed air present extensive and multiple lesions more often than the others. In the noncaisson worker, where the lesion is single and not extensive, the reparative changes are greater. Because of the presence of bone and joint changes in caisson workers, a long range investigation is warranted of all personnel in the armed forces subjected to either slow or rapid changes in atmospheric pressure, such as deep sea divers, submarine personnel, air personnel and others engaged in high altitude flying.

LEO G. RIGLER, HENRY S. KAPLAN and DANIEL L. FINK, University of Minnesota, Minneapolis:

Pernicious Anemia, Benign Polyps and Carcinoma of the Stomach: Exhibit showing studies on the relationship of benign to malignant tumors of the stomach and their association with pernicious anemia. Investigation of a large autopsy series indicates a far greater incidence of gastric tumors in patients with pernicious anemia than in the remainder of the population. Routine semiannual roentgen examinations of the stomach in patients with pernicious anemia confirm such findings. By this procedure many tumors in symptomless individuals have been discovered. The possibility of the early diagnosis of gastric tumors by roentgen examination before the appearance of symptoms will be exhibited by means of case studies.

Section on Anesthesiology

The representative to the Scientific Exhibit from the Section on Anesthesiology is E. A. Rovenstine, New York.

JOHN S. LUNDY, R. C. ADAMS and T. H. SELDON, Mayo Clinic, Rochester, Minn.:

Technic of Venipuncture and Parenteral Therapy: Exhibit demonstrating various technics employed in venipuncture for infusion, transfusion and intravenous anesthesia. A series of moulages, drawings and photographs demonstrate the veins of the extremities. Type of syringes and needles used, proper use of tourniquet, method of distending veins, the skin wheal and

bevel of needle in relation to venipuncture are shown. Another set of moulages demonstrate step by step the proper technic of venipuncture for infusion or transfusion and intravenous anesthesia.

R. A. Woodbury, B. E. Abreu and P. P. Volpitto, University of Georgia School of Medicine, Augusta, Ga.:

Influence of Different Forms of Artificial Respiration on the Pulmonary and Systemic Blood Pressure: Exhibit showing effects of eight methods of artificial respiration on the pulmonary and systemic blood pressures of dogs with slight, severe and complete cardiovascular respiratory depression. An improved technic has been developed for measuring the effective pulmonary and effective systemic blood pressure in unanesthetized animals not operated on. The resuscitative methods do not all significantly differ in their influence on the effective net pulmonary and net systemic blood pressures and produce little if any change in these pressures. In the presence of cardiac arrest they can cause a small blood flow through the ventricles. However, this blood flow which was produced by the resuscitators did not reach the vital areas (coronary and cerebral arteries). The blood was pushed toward the extremities and cutaneous areas.

Robert A. Hingson, United States Marine Hospital, Staten Island, New York, and Philadelphia Lying-In Hospital, Philadelphia, and Waldo B. Edwards and James L. Southworth, United States Marine Hospital, Staten Island, New York:

Continuous Caudal Analgesia: Exhibit emphasizing the anatomy of the peridural space, its relationship to the other structures comprising the vertebral column, the neurology of the uterus and the birth canal, and the variations of the human sacrum, particularly those of the sacral hiatus. The various technics with the malleable steel needle and the ureteral catheter are presented. The new psychology in managing patients during labor and delivery who are mentally wide awake is introduced. The pharmacologic safeguards necessary to prevent complications in the protection of both mother and baby are emphasized. A personal experience with more than 4,000 obstetric, surgical and medical cases is reviewed. The therapeutic application of the method to sciatica, eclampsia, thrombophlebitis and peripheral vascular diseases is included. (Motion picture in the Casino, Morrison Hotel.)

E. A. Rovenstine and S. G. Hershey, New York University College of Medicine, New York:

Therapeutic Nerve Block: Exhibit displaying an adult body size moulage with landmarks drawn on it and needles in place to demonstrate therapeutic nerve blocking. Drawings and charts will be used to show the clinical application of nerve blocks. Diagnostic instruments, record forms and other material are presented to show the organization of the nerve block clinic.

Mildred Trotter, Virginia S. Lanier, Gordon S. Letterman and Howard E. McKnight, Department of Anatomy, Washington University School of Medicine, St. Louis:

Continuous Caudal Analgesia; Pertinent Anatomic Features: Exhibit of sacrums demonstrating both normal and variant features; charts and roentgenograms illustrating levels reached by injections into the epidural space through the sacral hiatus; specimens prepared to show the relation between the dural sac and the apex of the sacral hiatus. (Aided by a grant from the U. S. Public Health Service.)

Urban H. Eversole, Leo V. Hand and Morris J. Nicholson, Lahey Clinic, Boston:

Spinal Anesthesia: Exhibit illustrating (1) the preparation of the patient for spinal anesthesia, (2) the administration of the agent and the management of the patient under spinal anesthesia, and (3) the prevention and management of operative and postoperative complications.

MOTION PICTURES

Casino, Lower Lobby, Morrison Hotel

Motion pictures will be presented under the auspices of the Committee on Scientific Exhibit on a regular schedule throughout the week. They will be shown in the Casino at the Morrison Hotel.

Monday, June 12, 2 p. m.

Motion pictures from the United States Army, the United States Navy and the United States Public Health Service, dealing with insects and insect-borne diseases, will be shown. Other films present subjects by individual investigators.

Medical Department Training Films, U. S. Army:
The Fly.
The Louse.
Louse-Borne Diseases.
Malaria, Cause and Control.

Bureau of Medicine and Surgery, U. S. Navy:
Life Cycle of Endamoeba Histolytica.

United States Public Health Service:
Life History of the Rocky Mountain Wood Tick.
Rocky Mountain Fever Vaccine.

M. E. Barnes, University of Iowa School of Medicine, Iowa City:
Trichinosis.

D. J. Leithauser, Detroit:
Out of Bed Within Twenty-Four Hours After Operation Prevents Pulmonary, Circulatory and Other Complications and Hastens Recovery.

Leo L. Hardt, Illinois Central Hospital, Chicago:
Gastroscopy as an Aid in Diagnosis of Diseases of the Stomach.
(Exhibit in Space B-12, Scientific Exhibit, Palmer House.)

Tuesday, June 13, 9 a. m.

Motion pictures will be shown from the Section on Nervous and Mental Diseases. Other films deal with the subject of rehabilitation.

Rudolph Jaeger, Jefferson Medical School and Hospital, Philadelphia:
Intervertebral Disk Injury (Herniated Nucleus Pulposus) Causing Sciatic Neuralgia.
Compound Depressed Fracture of the Skull.

A. E. Bennett, University of Nebraska College of Medicine, Omaha, and Paul T. Cash, Captain, M. C., U. S. Army.
Curare Sensitivity as a Diagnostic Test of Myasthenia Gravis.

E. S. Gurdjian and John E. Webster, Major, M. C., A. U. S., Wayne University College of Medicine and Grace Hospital, Detroit:
Operative Management of Traumatic Intracranial Hemorrhage.
(Exhibit in Space D-24, Scientific Exhibit, Palmer House.)

Harold C. Voris, Chicago:
Middle Meningeal Hemorrhages.
Subdural Hematoma.

George N. Thompson, Los Angeles County General Hospital, Los Angeles:
Electronarcosis—A Therapy in Schizophrenia and Certain Mental Disorders.

ORA L. HUDDLESTON, Major, M. C., A. U. S., Physical Therapy Section, Fitzsimons General Hospital, Denver:

Convalescent Ward at Fitzsimons General Hospital.

HOWARD A. RUSK, Lieutenant Colonel, M. C., U. S. Army Air Forces Headquarters, Washington, D. C.:

Convalescent Training in the Army Air Forces.

(Exhibit in Space A-9, Scientific Exhibit, Palmer House.)

REX L. DIVELEY, Colonel, U. S. Army Medical Corps, Office of the Surgeon General, War Department, Washington, D. C., and FRANK D. DICKSON, Kansas City, Mo.:

Rehabilitation of War Casualties.

Tuesday, June 13, 2 p. m.

Motion pictures dealing with various phases of anesthesia will be presented.

HAROLD F. BISHOP, Major, M. C., A. U. S., and BRIAN B. BLADES, Major, M. C., A. U. S., Washington, D. C.:

Continuous Caudal Anesthesia in Obstetrics.

A Study of Fresh Lung Specimens from the Surgical and Anesthetic Aspects.

The Blocking of Sympathetic Chain Ganglions.

ROBERT A. HINGSON, United States Marine Hospital, Staten Island, New York, and Philadelphia Lying-In Hospital, Philadelphia:

Continuous Caudal Analgesia in Obstetrics.

(Exhibit in Space F-39, Scientific Exhibit, Palmer House.)

JOHN H. EVANS, Buffalo:

Control of Pain and Discomfort by the Subcutaneous Injection of Oxygen.

FREDERICK M. ALLEN, City Hospital, New York:

Refrigeration Anesthesia.

(Exhibit in Space C-1, Scientific Exhibit, Palmer House.)

EDWARD B. TUOHY, Captain, M. C., A. U. S., Percy Jones General Hospital, Battle Creek, Mich.:

Continuous Spinal Anesthesia Utilizing the Ureteral Catheter Technic.

Wednesday, June 14, 9 a. m.

Motion pictures on surgery—plastic surgery especially—will be shown.

ADOLPH M. BROWN, The Eye and Ear Infirmary, University of Illinois, Chicago:

Prosthetic Correction of Inoperable Facial Deformities.

EDGAR J. POTH, University of Texas Medical Branch, Galveston:

A Technic of Skin Grafting: Instruments and Procedures.

HENRY N. HARKINS, Johns Hopkins University School of Medicine, Baltimore:

Treatment of Burns.

(Exhibit in Space F-25, Scientific Exhibit, Palmer House.)

EARL C. PADGETT, Kansas City, Mo.:

Skin Grafting and "Three Quarter" Thickness Skin Graft for Prevention and Correction of Cicatricial Formation.

(Exhibit in Space F-26, Scientific Exhibit, Palmer House.)

J. EASTMAN SHEEHAN, New York:

Plasma Fixation Method of Applying Skin Graft to Cover Large Raw Area of Leg.

Repair of Contracted Hand by Intermediate Skin Graft.

Use of Pinch Grafts to Cover a Large Area of Defect.

JAMES B. BROWN, Colonel, M. C., A. U. S., and FRANK MCDOWELL, St. Louis:

Late Functional Results in the Free Skin Grafting of Burns.

HARRY E. BACON, Temple University School of Medicine, Philadelphia:

Surgical Treatment of Cancer of the Rectum Without Colostomy and With Preservation of the Sphincter Muscle.

Wednesday, June 14, 2 p. m.

Motion pictures on miscellaneous subjects will be shown.

HARRY M. KIRSCHBAUM, Lieutenant Colonel, M. C., A. U. S., Patterson Field, Fairfield, Ohio:

Effect of Anoxia on the Sound of the Dog's Heart.

BENJAMIN JABLONS, New York:

The Diagnosis and Treatment of Peripheral Vascular Disease.

ABNER I. WEISMAN, New York:

A New Technic in Uterotubal X-Rays in the Diagnosis of Female Sterility.

M. E. BARNES, University of Iowa School of Medicine, Iowa City:

Trichinosis.

D. J. LEITHAUSER, Detroit:

Out of Bed Within Twenty-Four Hours After Operation Prevents Pulmonary, Circulatory and Other Complications and Hastens Recovery.

LEO L. HARDT, Illinois Central Hospital, Chicago.

Gastroscopy as an Aid in Diagnosis of Diseases of the Stomach.

(Exhibit in Space B-12, Scientific Exhibit, Palmer House.)

Thursday, June 15, 9 a. m.

Motion pictures on various phases of anesthesia will be shown.

HAROLD F. BISHOP, Major, M. C., A. U. S., and BRIAN B. BLADES, Major, M. C., A. U. S., Washington, D. C.:

Continuous Caudal Anesthesia in Obstetrics.

A Study of Fresh Lung Specimens from the Surgical and Anesthetic Aspects.

The Blocking of Sympathetic Chain Ganglions.

ROBERT A. HINGSON, United States Marine Hospital, Staten Island, New York, and Philadelphia Lying-In Hospital, Philadelphia:

Continuous Caudal Analgesia in Obstetrics.

(Exhibit in Space F-39, Scientific Exhibit, Palmer House.)

JOHN H. EVANS, Buffalo:

Control of Pain and Discomfort by the Subcutaneous Injection of Oxygen.

FREDERICK M. ALLEN, City Hospital, New York:

Refrigeration Anesthesia.

(Exhibit in Space C-1, Scientific Exhibit, Palmer House.)

EDWARD B. TUOHY, Captain, M. C., A. U. S., Percy Jones General Hospital, Battle Creek, Mich.:

Continuous Spinal Anesthesia Utilizing the Ureteral Catheter Technic.

Thursday, June 15, 1:30 p. m.

Motion pictures will be shown dealing with various phases of nervous and mental diseases and with rehabilitation.

RUDOLPH JAEGER, Jefferson Medical School and Hospital, Philadelphia:

Intervertebral Disk Injury (Herniated Nucleus Pulposus) Causing Sciatic Neuralgia.

Compound Depressed Fracture of the Skull.

A. E. BENNETT, University of Nebraska College of Medicine, Omaha, and PAUL T. CASH, Captain, M. C., U. S. Army:

Curare Sensitivity as a Diagnostic Test of Myasthenia Gravis.

E. S. GURDJIAN and JOHN E. WEBSTER, Major, M. C., A. U. S., Wayne University College of Medicine and Grace Hospital, Detroit:

Operative Management of Traumatic Intracranial Hemorrhage.

(Exhibit in Space D-24, Scientific Exhibit, Palmer House.)

HAROLD C. VORIS, Chicago:
Middle Meningeal Hemorrhages.
Subdural Hematoma.

GEORGE N. THOMPSON, Los Angeles County General Hospital, Los Angeles:
Electronarcosis—A Therapy in Schizophrenia and Certain Mental Disorders.

ORA L. HUDDLESTON, Major, M. C., A. U. S., Physical Therapy Section, Fitzsimons General Hospital, Denver:
Convalescent Ward at Fitzsimons General Hospital.

HOWARD A. RUSK, Lieutenant Colonel, M. C., U. S. Army Air Forces Headquarters, Washington, D. C.:
Convalescent Training in the Army Air Forces.
(Exhibit in Space A-9, Scientific Exhibit, Palmer House.)

REX L. DIVELEY, Colonel, U. S. Army Medical Corps, Office of the Surgeon General, War Department, Washington, D. C., and FRANK D. DICKSON, Kansas City, Mo.:
Rehabilitation of War Casualties.

Friday, June 16, 9 a. m.

Motion pictures will be shown on plastic surgery and other miscellaneous subjects.

ADOLPH M. BROWN, The Eye and Ear Infirmary, University of Illinois, Chicago:
Prosthetic Correction of Inoperable Facial Deformities.

EDGAR J. POTH, University of Texas Medical Branch, Galveston:
A Technic of Skin Grafting: Instruments and Procedures.

HENRY N. HARKINS, Johns Hopkins University School of Medicine, Baltimore:
Treatment of Burns.
(Exhibit in Space F-25, Scientific Exhibit, Palmer House.)

EARL C. PADGETT, Kansas City, Mo.:
Skin Grafting and "Three Quarter" Thickness Skin Graft for Prevention and Correction of Cicatricial Formation.
(Exhibit in Space F-26, Scientific Exhibit, Palmer House.)

J. EASTMAN SHEEHAN, New York:
Plasma Fixation Method of Applying Skin Graft to Cover Large Raw Area of Leg.
Repair of Contracted Hand by Intermediate Skin Graft.
Use of Pinch Grafts to Cover a Large Area of Defect.

JAMES B. BROWN, Colonel, M. C., A. U. S., and FRANK McDOWELL, St. Louis:
Late Functional Results in the Free Skin Grafting of Burns.

HARRY M. KIRSCHBAUM, Lieutenant Colonel, M. C., A. U. S., Patterson Field, Fairfield, Ohio:
Effect of Anoxia on the Sound of the Dog's Heart.

BENJAMIN JABLONS, New York:
The Diagnosis and Treatment of Peripheral Vascular Disease.

ABNER I. WEISMAN, New York:
A New Technic in Uterotubal X-Rays in the Diagnosis of Female Sterility.

Friday, June 16, 2 p. m.

Training films from the Bureau of Medicine and Surgery, U. S. Navy, and the Medical Department of the U. S. Army will be shown.

BUREAU OF MEDICINE AND SURGERY, U. S. Navy:
Medical Department in Amphibious Assault.
Pacific Island Number 43.
Protection Against Chemical Warfare—Common Gases.
Protection Against Chemical Warfare—The Gas Mask.

MEDICAL DEPARTMENT TRAINING FILMS, U. S. Army:
First Aid for Battle Injuries.
First Aid for Non-Battle Injuries
First Aid for Chemical Casualties.

Awards

There will be two groups of awards in the Scientific Exhibit, consisting each of (*a*) gold medal, (*b*) silver medal, (*c*) bronze medal, (*d*) certificates of merit and (*e*) honorable mention.

[NOTE.—The special subsidized exhibits (fractures, burns, chemotherapy and infectious diseases, and rehabilitation) are not open to awards.]

GROUP I

Awards in group I are made for exhibits of individual investigations, which are judged on basis of originality and excellence of presentation.

GROUP II

Awards in group II are made for exhibits that do not exemplify purely experimental studies but which are judged on basis of the excellence of correlating facts and excellence of presentation.

THE TECHNICAL EXPOSITION

STEVENS HOTEL, CHICAGO, JUNE 12-16

Occupying the Lower Level and Second Floor Areas of the Hotel

Each year the Technical Exposition seems to take on more importance as a Convention feature of practical interest and usefulness to physicians. For the most part it is a showing of necessities and accessories of medical practice now geared to civilian as well as military needs. The scope of this exhibition is wide, and any visiting member will do well to reserve sufficient time to review the many interesting and educational features presented by the two hundred or more firms participating in the Technical Exhibition. To summarize completely the content of this elaborate showing would require more space than is available; however, the following is a brief classification based on information already at hand:

Improved scientific equipment of all kinds; diagnostic aids; roentgenoscopic, radioscopic and fluoroscopic equipment developed to war needs; latest in instruments and laboratory requirements; diathermy, ultraviolet equipment and accessories; metabolic, electrocardiographic and resuscitating units; latest textbooks on practice of general medicine and the specialties; a crystallization of pharmaceutical developments along all lines, notably penicillin, shown in various methods of development and production; the sulfonamides; vitamins; new and important therapeutic agents of special interest to the profession; infant dietary specialties; foods of special purpose and general consumption; orthopedic appliances developed to exacting demands of World War II; scientifically adapted supportive appliances—shoes, clothing and so on; cosmetics developed under formulas that recognize known factors of interest to physicians in their relations to patients;

(Continued on advertising page 90)

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Changes in Status.—The subcommittee of the House Committee on Appropriations concluded hearings, April 27, on the proposed additional appropriation to continue the program of supplying obstetric and pediatric care to the wives and infants of servicemen. S. 1808 has been ordered favorably reported by the Senate Committee on Military Affairs, a bill to authorize temporary appointments as officers in the Army of the United States of members of the Army Nurse Corps, female dietetic and physical therapy personnel of the Medical Department of the Army, exclusive of students and apprentices, and female persons having the necessary qualifications for appointment in such department as female dietetic or physical therapy personnel. S. 1809 has been ordered favorably reported by the Senate Committee on Military Affairs, a bill to remove the limitation on the right to command of officers of the Dental Corps of the Army which limits such officers to command in that corps.

Bills Introduced.—S. 1861, introduced by Senator Andrews, Florida, proposes to authorize the Secretary of the Navy to establish a Dental Department in the Navy to function under the Surgeon General as is now provided in the case of the Medical Department. H. R. 4663, introduced by Representative Miller, Nebraska, proposes to transfer to the Federal Security Administrator and the Public Health Service, respectively, the functions of the Secretary of Labor and the Children's Bureau of the Department of Labor with respect to health. This bill is pending in the House Committee on Expenditures in the Executive Departments.

WOMAN'S AUXILIARY

WINNERS IN THE HYGEIA CONTEST

The American Medical Association offered $400 in cash prizes to the state and county auxiliaries which obtained the largest number of subscription credits to *Hygeia*. The contest covered the period from Sept. 1, 1943 to Jan. 31, 1944.

Cash prizes were awarded as follows:

Group 1. Auxiliaries with a membership of from 1 to 13:

First prize, $40, to Childress-Collingsworth-Hall counties, Texas, Mrs. R. E. Clark, Hygeia chairman, Memphis, Texas.

Second prize, $25, to Cass County, Mo., Mrs. David Long, Hygeia chairman, Harrisonville, Mo.

Third prize, $15, to Washington County, Minn., Mrs. D. Kalinoff, Hygeia chairman, Stillwater, Minn.

Group 2. Auxiliaries with a membership of from 14 to 23:

First prize, $40, to Walla Walla Valley, Wash., Mrs. J. T. Rooks, Hygeia chairman, Walla Walla, Wash.

Second prize, $25, to Vermilion County, Ill., Mrs. R. E. Johnson, Hygeia chairman, Danville, Ill.

Third prize, $15, to Chelan County, Wash., Mrs. George Hoxsey, Hygeia chairman, Wenatchee, Wash.

Group 3. Auxiliaries with a membership of from 24 to 42:

First prize, $40, to Raleigh County, W. Va., Mrs. A. C. Echols, Hygeia chairman, Layland, W. Va.

Second prize, $25, to Kitsap County, Wash., Mrs. K. P. Jackson, Hygeia chairman, Bremerton, Wash.

Third prize, $15, to Utah County, Utah, Mrs. Elden Clark, Hygeia chairman, Provo, Utah.

Group 4. Auxiliaries with a membership of from 43 to 643:

First prize, $40, to Westmoreland County, Pa., Mrs. A. B. Blackburn, Hygeia chairman, Latrobe, Pa.

Second prize, $25, to Salt Lake County, Utah, Mrs. W. R. Rumel, Hygeia chairman, Salt Lake City, Utah.

Third prize, $15, to Pierce County, Wash., Mrs. R. H. Rea, Hygeia chairman, Fort Steilacoom, Wash.

State winners:

First prize, $40, to state of Utah, Mrs. G. G. Moyes, Hygeia chairman, Ogden, Utah.

Second prize, $25, to state of Washington, Mrs. Elmer Porter, Hygeia chairman, Port Orchard, Wash.

Third prize, $15, to state of Illinois, Mrs. C. W. Stuart, Hygeia chairman, Oak Park, Ill.

Honorable Mention was given to the following counties:

Calhoun County, Ala., Mrs. C. H. Cleveland, chairman, Anniston, Ala.

St. Joseph County, Mich., Mrs. D. M. Kane, president, Sturgis, Mich.

Wayne County, N. C., Mrs. Ira C. Long, chairman, Goldsboro, N. C.

Lebanon County, Pa., Mrs. John E. Marshall, chairman, Lebanon, Pa.

Venango County, Pa., Mrs. P. E. Cunningham, chairman, Franklin, Pa.

Kenosha County, Wis., Mrs. L. T. Kent, chairman, Kenosha, Wis.

Washington-Ozaukee counties, Wis., Mrs. A. H. Barr, chairman, Port Washington, Wis.

Laramie County, Wyo., Mrs. G. B. Savory, chairman, Cheyenne, Wyo.

Other counties that have reached or exceeded their quota and had at least 25 subscription credits were Cook County, Ill.; Rock Island County, Ill.; St. Clair County, Ill.; Sangamon County, Ill.; Dallas-Guthrie counties, Iowa; Ouachita County, La.; Wayne County, Mich.; Buchanan County, Mo.; Greene County, Mo.; Jackson County, Mo.; Stark County, Ohio; Oklahoma County, Okla.; Bucks County, Pa.; Mercer County, Pa.; Warren County, Pa.; Hunt-Rockwell-Raines counties, Texas; Lamar County, Texas; Clark County, Wash.; Cowlitz County, Wash.; King County, Wash.; Snohomish County, Wash.; Spokane County, Wash.; Harrison County, W. Va.; Rock County, Wis.

This year's contest resulted in 8,322 subscription years as compared to 6,826 subscription years received during last year's contest.

To the Hygeia chairmen, officers and members of the various county and state woman's auxiliaries who have assisted in making this contest a success, Mrs. Arthur I. Edison, national Hygeia chairman, and the circulation manager of *Hygeia* express appreciation.

OFFICIAL NOTES

DOCTORS AT WAR

Radio broadcasts of Doctors at War by the American Medical Association in cooperation with the National Broadcasting Company and the Medical Department of the United States Army and the United States Navy are on the air each Saturday at 4:30 p. m. Eastern war time (3:30 Central war time, 2:30 Mountain war time and 1:30 Pacific war time).

The titles and guest speakers for the next three programs are as follows:

May 6. "They Shall Walk Again."
Speaker, Lieut. Comdr. Edward L. Corey, U.S.N., Washington, D. C.

May 13. No program. See below.

May 20. "War Nerves."
Speaker, Lieut. Col. Harold C. Lueth, M. C., A. U. S., Surgeon General's Liaison Officer. American Medical Association.

Doctors at War will not be on the air May 13, having relinquished its time on that date to the Office of War Information for the broadcast of a nationwide program in connection with the Cadet Nurse Corps of the U. S. Public Health Service.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE, OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Outbreak of Undulant Fever.—Fifteen cases of undulant fever with one death recently occurred in a small community in the northern counties of the state, according to *California's Health*. All of the milk used by those who were sick came from a single large local dairy that distributed raw milk. An investigation by the state department of agriculture showed that 75 per cent of the herd reacted to tests for undulant fever.

Meeting on the Heart.—At the meeting of the California Heart Association at the Biltmore Hotel, Los Angeles, May 6, the speakers include:

Comdr. John Russell Twiss (MC), Penicillin in the Treatment of Rheumatic Fever and Other Conditions in a Naval Hospital.
Dr. Morris H. Nathanson, Los Angeles, Factors Influencing Circulation Time.
Dr. Clinton H. Thienes, Los Angeles, An Experimental Study of Factors Influencing Pulmonary Hemorrhage.
Drs. Salvatore P. Lucia and William N. Sears, San Francisco, Problems in the Prevention of Luetic Cardiovascular Disease.
Drs. John Martin Askey and Otto Neurath, Los Angeles, The Prognostic Significance of Auricular Fibrillation Occurring with Myocardial Infarction.

New School of Public Health.—The establishment of a School of Public Health at the University of California, Berkeley, has been announced. Dr. Walter H. Brown, chairman of the department of hygiene, has been appointed acting dean, and the state assembly has made an appropriation to support the school. The new unit is planned as a universitywide undertaking using the resources of all the campuses and involves the participation of other schools and departments including the fields of medicine, medical research, education nursing, home economics and sanitary engineering. The department of hygiene will be renamed the department of public health and will function as part of the new school. Provision is to be made for graduate training of all types of public health personnel. According to an announcement from Dr. Brown, the first official activity of the school was a special training course for sanitarians to meet the needs of the state department of public health in the war emergency.

ILLINOIS

State Medical Meeting.—The one hundred and fourth annual session of the Illinois State Medical Society will be held at the Palmer House, Chicago, May 16-18. The oration in medicine will be delivered by Dr. Paul Dudley White, Boston, on "The Evolution of Our Knowledge of Coronary Heart Disease" and the oration in surgery by Brig. Gen. Fred W. Rankin, M. C., on "Progress in the Army Medical Services." Among the speakers will be:

Dr. Karl A. Meyer, Chicago, Surgical Indications.
Dr. Edward A. Piszczek, Chicago, Tuberculosis—A New Postwar Public Health Problem.
Dr. James P. Simonds, Chicago, Pathologic Basis for Clinical Manifestations in Nephritis.
Drs. Robert A. Hingson Jr. and Waldo B. Edwards, Philadelphia, Continuous Caudal Anesthesia.
Dr. Harold Gifford Jr., Omaha, The More Common Lacrimal Problems.

One session Wednesday morning will be devoted to chemotherapy, with Drs. Meyer, Alexander E. Brown, Rochester, Minn., and Alfred J. Aselmeyer, surgeon, U. S. Public Health Service, participating. Another session will be devoted to postwar public health service with Drs. Richard F. Boyd, Springfield, Conrad S. Sommer, Chicago, Adolph S. Rumreich, senior surgeon, U. S. Public Health Service, and Hugo V. Hullerman, Springfield, as speakers. Features will include a symposium on rheumatism, secretaries' conference, the veterans' service dinner conference and a fifty year club luncheon. Groups meeting during the session will include the Illinois Chapter of the American College of Chest Physicians, the Medical Women's Association, the Physician's Association and the Maternal Welfare Committee. Various alumni luncheons will be held. The Central States Society of Industrial Medicine and Surgery will be addressed on Tuesday by Dr. Harry E. Mock, Chicago, on "The Relation of Malignancy to Trauma" and Dr. Carl M. Peterson, Secretary, Council on Industrial Health, "The Changing Panorama of Industrial Medical Requirements."

Chicago

Dr. Volini Named Dean at Loyola.—Dr. Italo F. Volini, since 1929 professor and head of the department of medicine of Loyola University School of Medicine, has been named dean of the school for the duration of the war. Dr. Volini will take the place of Comdr. Francis J. Braceland (MC), on leave with the Navy.

Gold Headed Cane Awarded to Dr. Hektoen.—Dr. Ludvig Hektoen, executive director of the National Advisory Cancer Council of the U. S. Public Health Service, on April 8 was awarded the gold headed cane of the American Association of Pathologists and Bacteriologists in recognition of his distinguished service to pathology and his unselfish devotion to the highest ideals of the profession.

Dr. Karsner to Give First Zeit Lecture.—Dr. Howard T. Karsner, professor of pathology and director of the Institute of Pathology, Western Reserve University, Cleveland, will deliver the first Frederick Robert Zeit Lecture at Thorne Hall, Northwestern University Medical School, May 18, on "Hepatic Cirrhosis." The lecture is sponsored by the Xi chapter of Alpha Kappa Kappa Fraternity. The lecture honors the late Dr. Frederick Robert Zeit, who was professor of pathology at Northwestern University Medical School and founder of the Frederick Robert Zeit Museum of Pathology at the university.

KANSAS

State Medical Meeting.—The Kansas Medical Society will hold its eighty-fifth annual session in Topeka, May 10-11, under the presidency of Dr. John L. Lattimore, Topeka. Included among the speakers will be:

Dr. Robert D. Schrock, Omaha, Fractures and Dislocations of the Wrist.
Dr. Archibald L. Hoyne, Chicago, Management of Acute Infectious Diseases in Childhood.
Dr. Edward Massie, St. Louis, Newer Aspects in Management of Hypertension.
Dr. William G. Gordon, Kansas City, Renal Tuberculosis.
Dr. Udo J. Wile, Ann Arbor, Mich., Recent Advances in Syphilis Therapy.
Dr. Oscar Theron Clagett, Rochester, Minn., Surgical Management in Pulmonary Suppurative Disease.
Dr. Albert D. Ruedemann, Cleveland, Headaches and Head Pains of Interest to the General Man.
Dr. Morris Edward Davis, Chicago, Diagnosis and Treatment of Hemorrhage in Pregnancy.
Dr. John S. Coulter, Chicago, Physical Therapy in the Office.

Lieut. Col. Howard A. Rusk, M. C., will address the annual banquet Wednesday on "Convalescent Rehabilitation Program in the Army."

MASSACHUSETTS

State Medical Meeting in Boston.—The one hundred and sixty-third annual meeting of the Massachusetts Medical Society will be held at the Hotel Statler, Boston, May 22-24, under the presidency of Dr. Roger I. Lee, Boston. Included among the out-of-state speakers will be:

Dr. Philip D. Wilson, New York, Reconstructive Surgery.
Dr. Kristian G. Hansson, New York, Physical Therapy: Its Relation to War Injuries.
Dr. Winfred Overholser, Washington, D. C., Psychiatric Casualties of the War and Their Treatment.
Dr. Richard W. Te Linde, Baltimore, Some Practical Aspects of Female Genital Bleeding.
Dr. Howard Fox, New York, Tropical Diseases of the Skin.
Dr. Henry S. Ruth, Philadelphia, Postwar Planning in Anesthesiology.
Dr. Walter C. Alvarez, Rochester, Minn., Abdominal Pain.
Dr. Allen O. Whipple, New York, How Shall We Provide Postgraduate Training in Surgery for Men at Present Serving in the Armed Forces?

Dr. Joseph C. Aub, Boston, will deliver the annual oration Tuesday on "The Toxic Factor in Traumatic Shock" and Dr. Alfred Blalock, Baltimore, the Shattuck Lecture on "A Consideration of Certain Recent Advances in Surgery." At the annual dinner Tuesday evening, the speakers will include the governor of Massachusetts, Leverett Saltonstall, and William Cunningham of the Boston *Herald*. Special features will include symposiums on war injuries and gallbladder disease and a panel discussion on the selection and use of the newer drugs. There will be meetings of the regional fracture committee of Massachusetts of the American College of Surgeons, May 24; of the Massachusetts Medico-Legal Society, May 23, and of the Massachusetts members of the New England Society of Anesthesiology, May 24.

MICHIGAN

Physician Arrested on Narcotic Charge.—Dr. Ralph B. Howard, Benton Harbor, entered a nolo contendere plea of guilty in federal court, Grand Rapids, to a charge of "illegal sale of morphine sulfate in prescriptions not in the course of regular practice," newspapers reported March 17.

Program on Alcoholism.—At a statewide conference on the prevention and cure of alcoholism, sponsored jointly by the Michigan Temperance Foundation, Michigan State College of Agriculture and Applied Science, East Lansing, and Yale University, New Haven, Conn., April 19, the speakers included Lawrence Kolb, assistant surgeon general, U. S. Public Health Service, on "Public Health Aspects of the Alcohol Problem," and Dr. Haven Emerson, New York, "Education and Prevention of Alcoholism." Newspapers reported this conference to be the first meeting since the first School of Alcohol Studies at Yale University last summer (THE JOURNAL, Dec. 4, 1943, p. 916), although the university is said to be planning to cooperate in similar programs in other states.

Michigan Society and University Cooperate in Radio Talks.—A new series of popular medical talks began April 27 over station WJR, Detroit, under the auspices of the Michigan State Medical Society and the University of Michigan. Dr. Richard H. Freyberg gave the first lecture, on "Modern Treatment of Arthritis." Forthcoming lectures will include:

Dr. Ernest H. Watson, Accidents in Childhood, May 4.
Dr. Robert A. Hettig, Postwar Problems Relative to Tropical Diseases, May 11.
Dr. Russell N. DeJong, Sick Headaches: Their Significance and Treatment, May 18.

All speakers are members of the faculty of the University of Michigan Medical School, Ann Arbor.

MISSOURI

Medical Society Honors Mrs. Hirsch.—The Jackson County Medical Society presented an award key to Mrs. Ruth Hirsch recently in recognition of her outstanding work in the "interest of medicine and public health." The award represents seven years of "meritorious and untiring effort" on the part of Mrs. Hirsch, president of the Jackson County Health Forum Board, in arranging for speakers on public health problems for the education of the public. Dr. Morris Fishbein, Editor, THE JOURNAL, who addressed the forum on "New Knowledge of Cancer," made the presentation to Mrs. Hirsch. The award is a gold key bearing in white enamel the figure of the goddess Hygeia. It is a function of the public policy and relations committee of the society.

NEW YORK

Dental Caries Demonstration.—The New York State Department of Health has launched a long range demonstration in Newburgh and Kingston, in cooperation with local authorities, to determine the practicability of mass protection against dental caries by adding fluorine to public drinking water supplies. Dental examination will be made annually of all 5 to 12 year old children in the schools for a period of ten years, the results to be made available to the school superintendents each year. *Health News* reports that it will be about ten years before the full benefits of the treatment will be realized. One report stated that the fathers in Kingston have promised that their children will forego fluorine for the ten year period to provide a control group for Newburgh. The latter town will have the fluorine concentration increased from 0.12 part per million to 1.0 part per million. Examinations of salivas of a sample of the school populations will also be made to ascertain the amount of Lactobacillus acidophilus present. Pediatric examinations will be made of a sample of the child populations, including a general physical examination, urinalysis and x-ray films of the long bones and centers of ossification. Analysis of the water for fluorine concentration will be made at the filtration plant and at the division of laboratories and research of the state department of health, Albany.

New York City

More Investigating of "Kickbacks."—The commissioner of investigation stated on April 20 that an investigation was being made of alleged fee splitting between "certain doctors" at Queens General Hospital, Jamaica, and the operators of private ambulance services. According to the New York *Times* the inquiry, ordered by Mayor La Guardia March 20 at the request of Dr. Edward M. Bernecker, commissioner of hospitals, may be extended to include city hospitals in other boroughs. The commissioner of investigation, Edgar Bromberger, is reported to have said that his inquiry was mainly concerned with charges that some doctors at the Queens institution had received "kickbacks" in connection with fees charged patients using private ambulances when admitted to the hospital. It was stated that the investigation thus far had shown "reasonable grounds" to believe that admitting physicians have been guilty of official misconduct consisting in recommending to prospective patients or their families the use of private ambulance services.

Dr. Cowles Wins Court Decision.—Dr. Edward Spencer Cowles, director of the Park Avenue Hospital, was upheld in every count when the Court of Appeals affirmed the order of the appellate division against the board of regents of the state of New York, the New York *Times* reported on April 21. The action grew out of charges originally brought by the office of the New York State Attorney General alleging that the Body and Mind Foundation, established by Dr. Cowles as a center for the treatment of mental and nervous disorders, had violated the law that prohibits the practice of medicine by a corporation. The board of regents sustained the charges and voted to suspend Dr. Cowles's license for a year. According to the *Times* this decision was unanimously reversed by the appellate division, third department, in Albany, in November 1943; the board of regents then appealed to the Court of Appeals. In affirming the decision of the appellate division upholding Dr. Cowles, the court also ordered payment of costs. The briefs submitted by the attorneys to the court contained testimonials from a large number of persons prominent in many walks of life, the *Times* stated, all of whom described Dr. Cowles as "an outstanding psychiatrist and a benefactor to humanity, who has helped thousands to resume normal lives" (THE JOURNAL, May 1, 1943; p. 50; Dec. 4, 1943, p. 918).

Dr. Berg Sets Up Memorial at Mount Sinai.—Dr. Albert A. Berg, consulting surgeon at Mount Sinai Hospital, has given a large fund to the hospital to finance the construction of the Henry W. Berg Research Laboratory Building. The construction of the laboratory building will be started as soon after the war as material and labor become available on a site centrally located among Mount Sinai's existing group of eighteen buildings. Dr. Berg intends the building to honor his brother the late Dr. Henry W. Berg, who was a member of the attending staff of the hospital for forty years until his death in 1938. Dr. Albert Berg has been identified with the hospital since his appointment there as an intern in 1894. The two brothers were lifelong associates, not only at the hospital but also in their private interests. They maintained joint offices. They shared a hobby of collecting rare books and manuscripts and accumulated a collection which Dr. Berg in 1940 and 1941 presented to the New York Public Library and which is now housed in special rooms there. The new laboratory building will provide accommodations for research in bacteriology, pathology, physiology, chemistry, gastroenterology, cardiology, hematology, endocrinology, metabolism, allergy, biophysics and other branches of research. The hospital's electron microscope, its ultracentrifuge and other specialized research apparatus will be housed in the new structure.

SOUTH CAROLINA

State Medical Election.—Dr. William Thomas Brockman, Greenville, was named president-elect of the South Carolina Medical Association April 11 during its annual meeting and Dr. William R. Wallace, Chester, was installed as president. Other officers include Dr. George E. Thompson, Spartanburg, vice president, and Dr. Julian P. Price, Florence, secretary.

Dr. Hayne Resigns as State Health Officer.—Dr. James A. Hayne, state health officer for thirty-three years, resigned April 11 during the annual meeting of the South Carolina Medical Association and was immediately recommended for appointment to a newly created post of director of health education. Dr. Benjamin F. Wyman, Columbia, director of rural health work in the state board of health, was recommended by the council of the state association to succeed Dr. Hayne as health officer. Dr. Hayne graduated at the Medical College of the State of South Carolina, Charleston, in 1895. On the day that he completed thirty-three years as state health officer and secretary of the board of health, newspapers reported that he transferred to his new position as director of health education.

WASHINGTON

Geriatric Hospital.—What is said to be the first geriatric institution in the United States is almost completed at Western State Hospital, Fort Steilacoom, according to *Northwest Medicine*. When finished the unit will care for about 1,000 old persons. The south wing, now under construction, will have accommodations for about 500 men and women and will cost about $305,000. The building is of one story construction without stairs or ramps.

WEST VIRGINIA

Dr. Lawless in Charge of University Health Service.—Dr. John J. Lawless, White Sulphur Springs, has been appointed director of university health service and associate professor of medicine and surgery at the West Virginia University School of Medicine, Morgantown. He succeeds Dr. Jerome E. Andes, who had held the position since September 1943 and resigned because of ill health.

State Medical Meeting.—The seventy-seventh annual meeting of the West Virginia State Medical Association will be held at the Hotel Windsor, Wheeling, May 15-16, under the presidency of Dr. Robert J. Reed Jr., Wheeling. Lieut. Comdr. John O. Rankin (MC) will deliver the oration on surgery Monday on "Surgical Experiences in a Continental U. S. Naval Hospital" and Dr. Andrew E. Amick, Charleston, the oration on medicine Tuesday on "Growing Children—Our Responsibility." Included among the speakers on the program will be:

Dr. Samuel A. Cosgrove, Jersey City, N. J., The Medical and Surgical Complications of Pregnancy.
Dr. Walter C. Alvarez, Rochester, Minn., What Is the Matter with the Patient Who Is Always Tired?
Major Ralph H. Kunstadter, M. C., The Diagnosis and Management of Malaria.
Dr. Charles A. Doan, Columbus, Ohio, The Differential Diagnosis and Treatment of Diseases Involving the Spleen.
Dr. William W. Waddell Jr., Charlottesville, Va., Recent Advances in the Treatment of Purulent Meningitis.
Dr. Richard B. Cattell, Boston, Surgery of the Upper Gastrointestinal Tract.
Dr. Francis H. Adler, Philadelphia, The Role of Exophthalmos in the Differential Diagnosis and Treatment of Graves' Disease.
Lieut. Col. John W. R. Norton, M. C., Observations in Disease Control Methods Among Overseas Troops.
Capt. Alphonse McMahon (MC), Medicine in the South Pacific.

Dr. Reed will deliver his presidential address at the past presidents' dinner Monday evening on "Beyond the Blue Horizon." At a victory dinner meeting the following night Capt. William M. Sheppe (MC) will be the toastmaster, and speakers will be Colonel Norton on "How It Feels to Be Torpedoed at 2 A. M. in December" and Captain McMahon, "Native Customs of the South Pacific." The woman's auxiliary to the state medical association will convene at the McLure Hotel, with Captain Sheppe delivering the principal address, on "Recent Advances in Medical Care of Naval Personnel."

GENERAL

Examinations of Specialty Boards.—The American Board of Otolaryngology will conduct an examination at the Palmer House, Chicago, October 4-7. Dr. Dean M. Lierle, University Hospitals, Iowa City, is secretary of the board.——The next examination of the American Board of Neurological Surgery will be held on June 5 at the Illinois Neuropsychiatric Institute, 912 South Wood Street, Chicago. Dr. Paul C. Bucy, Chicago, is secretary of the board.

Special Society Elections.—Dr. Frank E. Adair, New York, was elected president of the American Society for the Control of Cancer at its annual meeting in New York, March 11. Dr. Edwin P. Lehman, Charlottesville, director of the Virginia Cancer Foundation, was chosen vice president and Dr. Eugene P. Pendergrass, professor of radiology at the University of Pennsylvania School of Medicine, Philadelphia, secretary.——At a meeting of the American Association of Pathologists and Bacteriologists, April 8, it was voted to hold the next annual scientific session at the University of Chicago, May 4-5, 1945. "Infectious Granulomas, Exclusive of Tuberculosis and Syphilis" will be the theme of the meeting, with Dr. Wiley D. Forbus, professor of pathology, Duke University School of Medicine, Durham, N. C., as referee. The officers of the association will continue in office until the next meeting: Dr. Paul R. Cannon, Chicago, president, Dr. Forbus, vice president, Dr. Howard T. Karsner, Cleveland, secretary, and Dr. Alan R. Moritz, Boston, treasurer.

Society for Clinical Investigation.—The thirty-sixth annual meeting of the American Society for Clinical Investigation will be held at the Claridge Hotel, Atlantic City, N. J., May 8, under the presidency of Dr. Fuller Albright, Boston. Included among the speakers will be:

Drs. David D. Rutstein, Karl Jefferson Thomson, Daniel M. Tolmach, William H. Walker and Robert J. Floody, Albany, N. Y., Plasma Volume and "Extravascular Thiocyanate Space" in Pneumococcus Pneumonia.
Drs. Lewis Thomas, George S. Mirick, Edward C. Curnen Jr., James E. Ziegler Jr. and Frank L. Horsfall Jr., New York, Nonhemolytic Streptococci in Primary Atypical Pneumonia.
Drs. Douglas S. Riggs, Alexander W. Winkler and Evelyn B. Man, Ph.D., New Haven, Conn., Serum Iodine and Basal Metabolism of Myxedematous and Euthryoid Subjects Treated with Desiccated Thyroid.
Dr. Arild E. Hansen, Galveston, Texas, Influence of Fat in Diet on Cholesterol Ester Fatty Acids in Hypothyroid State.
Dr. Caroline C. B. Thomas, Baltimore, Experimental Hypertension from Section of Moderator Nerves: The Relationship of the Acute Pressor Response to the Development and Course of Chronic Hypertension.
Dr. Ralph Wayne Rundles, Ann Arbor, Mich., Orthostatic Hypotension and Orthostatic Tachycardia in Patients with Diabetic Neuropathy.
Dr. Edwin B. Astwood, Boston, Control of Hyperthyroidism with Thiouracil and Continued Remission After Therapy.

Falls Leading Cause of Fatal Accidents.—Falls are the leading cause of fatal accidents in the United States, according to the Metropolitan Life Insurance Company. About one half occur on stairs and floors. In 1943 falls were responsible for more than 25,000 deaths, 2,000 more than the number killed as a result of motor vehicle accidents. While falls are of common occurrence among persons of all ages, more than two thirds of the deaths from falls happen among persons 65 years of age or over. It was stated that under the age of 5 fatal falls out of beds and windows and from balconies and porches are not uncommon. In the adventurous school ages 5 to 14 among boys, diving accidents and falls from trees and roofs took many lives. At the ages 15 to 64 the fatal falls among males reflect their exposure to industrial hazards, for in this group there is a high percentage of deaths by falls from ladders, scaffolds and roofs, and, generally, falls in building construction. The highest proportion of deaths in this group, however, 26.2 and 32.5 among males and females respectively, are caused by falls on stairs and steps. Among females the proportion of deaths from falls on floors is almost as large as for falls on stairs. Falls on the street cause 12.7 per cent and 9.1 per cent of the deaths of males and females respectively. At the oldest ages also the greatest number of fatal falls among males occur on stairs, but among females falls on floors account for the largest proportion, it was stated.

Physicians Asked to Watch for Impostor with Ulcer.—The Federal Bureau of Investigation is asking physicians to be on the lookout for one Jack K. Meredith, who is known to have used more than a hundred aliases while he obtained his livelihood through various schemes of fraud. At the present

JACK K. MEREDITH, Wanted by Federal Authorities

time Meredith has a varicose ulcer on his right ankle and must have medical attention. Since his release from a penitentiary in 1942, Meredith is said to have secured thousand of dollars monthly from individuals throughout the United States. He is wanted by the Federal Bureau of Investigation for violation of the National Stolen Property Act, National Motor Vehicle Theft Act and Federal Impersonation Statute. The description of Meredith, who is armed and dangerous, is reported as follows:

Age	51 years
Height	5 feet, 8½ inches
Weight	155 pounds
Eyes	hazel
Hair	brown, turning gray
Complexion	medium ruddy, face wrinkled
Build	slender, slightly stooped
Race	white
Nationality	American
Occupation	fraudulent check passer, confidence man
Scars and marks	scar in center of back, ruptured vein inside right knee, freckled back and shoulders, scars on right shin, appendectomy scar, varicose ulcer right ankle, limps right leg
Peculiarities	quiet, convincing talker, friendly, dresses well.

Physicians are asked to notify the nearest field division of the Federal Bureau of Investigation if Meredith calls for treatment.

Centennial Meeting of Psychiatrists.—The one hundredth annual meeting of the American Psychiatric Association will be held at the Bellevue-Stratford Hotel, Philadelphia, May 15-18, under the presidency of Dr. Edward A. Strecker, Philadelphia. A special feature of the meeting will be a historical

exhibit showing the progress of psychiatry, particularly as related to the growth and development of the association. Among the speakers on the centenary day program Wednesday will be:

Major Gen. George B. Chisholm, R. C. A. M. C., Psychological Adjustment of Soldiers to the Army and to Civilian Life.
Thomas North Whitehead, M.A., Cambridge, Mass., Group Attitudes and Their Effects on Communication.
Dr. Alan Gregg, New York, A Critique of Psychiatry.

Included among other speakers on the program will be:

Dr. John H. Taylor Jr., Trenton, N. J., Schizophrenics Treated with Shock Therapy.
Drs. Leonard E. Himler and Theophile Raphael, Ann Arbor, Mich., A Follow-Up Study on 70 Former College Students Subject to Convulsive Disorders.
Capt. Ephraim Roseman, M. C., The Epileptic in the Army.
Drs. Gustav Bychowski and Frank J. Curran, New York, Current Problems in Medicolegal Testimony.
Howard Hanson, Mus. Doc., Rochester, N. Y., Some Objective Studies of Rhythm in Music.
Dr. Leonard Rosenzweig, North Warren, Pa., and Laura Durbin, A.B., Erie, Pa., Fingerpainting as an Investigative Approach to Therapeutic Technics.

Three section meetings will be devoted to "Psychiatry and the U. S. Army," "Psychiatry and the U. S. Public Health Service" and "Psychiatry and the U. S. Navy." A number of sessions will be held jointly with a number of groups interested in this specialty.

Goals for Children and Youth as We Move from War to Peace.—The Children's Bureau Commission on Children in Wartime at a meeting in Washington, March 17-18, adopted a series of goals for children as an extension of the Children's Charter in Wartime adopted two years ago. The Children's Bureau points out that over five and one-half million mothers of children under the age of 14 are employed in war plants and service industries. Nearly three million boys and girls under the age of 18 years are employed, having left school or carry combined programs of school and work. As they reach 18 these boys are subject to induction into the armed forces. Pointing out that concentrated programs have resulted in children receiving a higher level of nutrition, the addition of hospitals, schools and recreation centers to communities, decrease in maternal mortality and infant mortality rates, the Children's Bureau states that the children and youth are not receiving the care, protection and educational opportunity that their own and the nation's welfare and future require. The Children's Bureau states that the shortages of doctors, nurses and health and hospital facilities are affecting the quantity and quality of health protection and medical care, especially in military and war production areas and in many rural areas in which shortages existed before the war, constituting a serious threat to the well-being of children and the future strength of the nation. The principal goals, as outlined, include:

Extension of health service and medical care to assure access to adequate care for all mothers and children. . . .
Regulating child labor and safeguarding youth in wartime employment; planning now for young workers demobilized from industry and for youth leaving school in the demobilization period; developing policies for the postwar period which will assure protection and educational and employment opportunity to youth. . . .
Development of community recreation and leisure time services for young people, with participation in planning and management by youths themselves.
Safeguarding family life in wartime, during demobilization and in the postwar period.
Development of state and local public child welfare programs and the work of private agencies to assure social services to every child whose home conditions or individual difficulties require special attention.
Review and revision of legislative safeguards and standards relating to children in preparation for the 1945 sessions of the legislatures in the light of these goals for children.
Sharing of the public responsibility for the health, education and welfare of children by federal, state and local authorities, with recognition of the primary responsibility of the state and local units, the importance of providing federal funds for local services through grants-in-aid to appropriate state agencies, and with the removal of residence restrictions in the selection of personnel for such programs.
Provision for the training of professional personnel required for services for children and youths and for the preparation of volunteers to assist in rendering such services.
Increased opportunities for youths to share in the planning and development of programs—local, state and national and international—for the benefit of youths.
Education of parents, youths and all citizens concerning the importance of providing full security and opportunity for children for the sake of their own happiness and well-being and for the future of the nation.

The Children's Bureau Commission on Children in Wartime was appointed by the chief of the Children's Bureau and held its first meeting March 16-18, 1942. In February the commission was reappointed with certain changes in membership to place it in a position to consider the problems that will affect children and youths during 1944 and 1945.

LATIN AMERICA

Health Activities in Latin America.—*Report on West Indian Conference.*—According to a recent report quoting Dr. Pablo Morales Otero, San Juan, of the School of Tropical Medicine of Puerto Rico and a member of the first sectional committee to be established by the Caribbean Research Council, which functions under the auspices of the Anglo-American Caribbean Commission, various resolutions on venereal diseases, public health and quarantine which are similar to those already in effect in Puerto Rico were adopted at a West Indian Conference recently in Barbados. It was pointed out that some advance in the control of yellow fever and a decrease of tuberculosis had been made in Puerto Rico, and credit for the decrease in venereal disease is largely given to the Institute of Social Hygiene and the Institute of Public Health. A group was officially appointed at the Barbados meeting to confer at least once a year on venereal diseases, and subcommittees were named by the Caribbean Research Council to consider various phases of public health, medicine, building and engineering research, industries and social science.

Society News.—The first Pan American Congress on Mental Hygiene will be held in Rio de Janeiro and Buenos Aires, the dates to be announced later.

Prize for Work on Poliomyelitis.—The Rodolfo Fitte Foundation announced a prize of $2,500 to the author of the best work on poliomyelitis in Argentina. The competitive essays should be sent to the foundation, Avenida Quintana 39, Buenos Aires, before December 1.

Physician Honored.—Dr. Rafael Angel Calderón Guardia, San Jose, president of Costa Rica and a graduate of the University of Brussels in 1927, was recently named as the first recipient of the Cross of the Americas, the medal of honor awarded by the Inter-American Institute. The medal is conferred on those who have distinguished themselves in promoting the unity of the Americas, according to the *Bulletin* of the institute.

Bolivian Minister Visits United States.—An announcement from La Paz indicated that the Bolivian minister for public health and labor, Mr. Victor Andrade, is visiting the United States to gain first hand information about social and health questions and to seek further cooperation from health authorities, if possible, for special problems in his own country. Mr. Andrade is said to be particularly interested in modern dwelling conditions for workers in large industrial areas and in conditions for protecting the worker's health.

CANADA

Grants to Medical Men Returning from Military Service.—The provincial government of Ontario in cooperation with the Rockefeller Foundation plans to make grants to medical men returning from military service to aid postgraduate training of much needed medical personnel for public health services in Ontario. It was stated that the provincial government, in cooperation with the Rockefeller Foundation, will pay $200 a month for married men who wish to take advantage of this postgraduate education and $145 a month for single men.

Cancer Foundation Created.—The establishment of a cancer control foundation in Ontario for diagnosis and treatment and research in cancer has been announced. A legislative appropriation of $500,000 will assist in the support of the foundation, which has been empowered to acquire lands and buildings and to employ a director, officers and the necessary clerical staff. Lieut. Col. A. L. Bishop, Toronto, is chairman of the foundation, other members of which include Arthur Ford, London, Dr. George S. Young, Toronto, Malcolm Cochrane, Port Arthur, Robert Brown, Toronto, R. E. Stratford, Sarnia, and Kenneth Emerson Deacon, Unionville. Dr. Reginald P. Vivian, Port Hope, health minister of Ontario, stated that the foundation is being set up in addition to an existing commission for the investigation of cancer remedies. A provision has been made in the budget for continuing assistance by way of grants to existing institutes of radiotherapy and clinics now in operation. An announcement from the Canada Wartime Information Board stated that 4,987 persons died of cancer in Ontario in the past year, constituting 12.8 per cent of all deaths in the province.

Deaths in Other Countries

Dr. William Lyon Mackenzie King, Toronto, Ont., Canada, formerly a member of the Minnesota State Medical Association, was lost at sea when the British destroyer *St. Croix* was torpedoed recently in the North Atlantic. He had received the degree of master of science in surgery at the University of Minnesota in June 1941.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 1, 1944.

Malnutrition in Occupied Europe

In the House of Lords a debate took place recently on food conditions in enemy occupied Europe. The horror of the situation as the result of German rapacity and enslavement for war work of a large proportion of the workers is only too well known, but an exact, scientific estimate of prevailing conditions was given by Lord Horder. He thought that in the past some rather wild statements had been made about famine and hunger. Prolonged malnutrition was a much more serious medical problem than famine, he said, because it led to diseases of low resistance, the chief of which was tuberculosis, and to conditions which may take several generations to remedy. The clinical examination of refugees who reached Lisbon in August showed evidence of prolonged malnutrition. Last September the basic daily ration in Belgium was about 1,260 calories, whereas authorities agree that 2,480 is the lowest amount required for health. In Belgium, children up to 6 years got supplementary rations, Lord Horder said, but after that age these were withdrawn. Adolescents from 14 to 21 were suffering greatly from want of proper nourishment, it was disclosed. Investigations in Belgium also showed that many adults had lost 20 to 30 pounds (9 to 13.6 Kg.). Pregnant women showed a drop of 80 per cent in normal weight gain, and infants at birth showed a drop in weight of 2⅕ pounds (1 Kg.). In Belgium too the number of people receiving a supplementary ration because of tuberculosis rose sharply from 70,000 in December 1941 to 110,000 in February 1943. Lord Horder joined in an appeal to the government, made previously by the Archbishop of Canterbury, to do something to alleviate these conditions.

The Earl of Selborne, minister of economic warfare, said that the question was not simply that our blockade was causing evil. It was, he said, the choice of a lesser evil. If we had not applied the blockade, Germany would have gained additional manpower for her army and munitions factories. We had endeavored to mitigate the impact of our blockade on our unfortunate allies in every way possible, the minister said. We had facilitated the import of food through neutral countries within the blockade area, such as the dispatch of Portuguese fish to distressed areas. We had taken vitamin D off the contraband list, because this would not seriously assist the enemy. He produced figures officially published in Belgium, which he had no reason to think were faked, showing that the death rate was little higher than before the war. If we supplied food, the Germans, by reducing the basic ration, could nullify the supplementary ration so furnished. The government, he said, would not do anything that would prolong the war.

The Radon Treatment of Glioma of the Retina

Glioma of the retina arises in the first few years of life and shows a strong hereditary tendency. If not destroyed, it quickly proves fatal by extension along the optic nerve to the brain. Before 1929 the treatment recommended was excision of the eye, a dreadful expedient when both eyes were affected, as occurred in about one fourth of the cases. Not unnaturally many parents preferred that their children should die rather than undergo excision of both eyes. At last, a successful alternative appears to have been found in radon treatment. In *St. Bartholomew's Hospital Journal* Mr. Seymour Philps and Mr. A. C. L. Houlton report the first case in which the opportunity to use radon seeds in a bilateral case occurred.

A boy of 5 attended Moorfields Hospital and was seen by Mr. Rupert Scott. He had growths in both eyes. His mother was not unfamiliar with the condition, for an elder brother of the patient had had both eyes removed for the same disease and had died six weeks later. She therefore refused to consent to double excision. One eye, extensively destroyed by the growth, was removed, and the child was transferred to St. Bartholomew's Hospital, where Foster Moore inserted a 3 millicurie radon seed into the center of the tumor in the remaining eye on Nov. 15, 1929. The growth became chalky white and broke up into pieces, finally disappearing. But on further examination it was thought that there was some sign of recurrence, and further seeds were attached to the sclera. In the light of further experience it seemed that what was thought to be recurrence of the growth was reparative fibrous tissue. The eye therefore received a larger dose of radon than was necessary. The skill with which the radon was applied is indicated by the fact that at the end of the treatment the boy had vision of 6/12 in spite of the large dose of radon, which had caused some change at the macula. The boy is now a healthy lad, able to earn his living by selling newspapers, though his vision has deteriorated owing to an irradiational cataract, which he prefers not to have removed.

Some other successful cases subsequently have been reported in this country, and it has been established that retinal gliomas are highly radiosensitive and can be destroyed by radon seeds. The normal tissues of the eye are also destroyed, but to a lesser extent, and by accurate localization a dose of radon can be applied which will destroy the tumor and leave a useful eye. Philps and Houlton also report another case. A boy aged 8 months was brought to the Oxford Eye Hospital in July 1940 with bilateral glioma of the retina. The left eye, being half full of growth, was excised. In the right eye was a globular tumor measuring 6 disk diameters. In the feeling that there had been a tendency to overirradiate these growths, a minimal dose 2.5 millicurie radon seed was inserted into the center of the growth on July 25. It was removed on August 8 when the tumor was of the same size but whiter. The growth fragmented and became much smaller. When discharged on September 9 the boy was well and the eye white. Central vision seemed to be good. At the present time there is a mulberry shaped knob at the site of the tumor, which has grown smaller over the years. At the age of 4 years the child is bright and intelligent and sees well with his one eye. His vision is 6/12.

Homeopath's Attempt to Avoid National Service

In this country the regard for freedom of the individual is carried so far that one is not compelled to enter the army if one has a conscientious objection to taking part in war. But, as an alternative, one can be compelled to undertake, by direction of the government, work of national importance. An unusual case has occurred in which a homeopath endeavored to avoid national service on the ground that he had a conscientious objection to giving allopathic treatment. He was directed by a national service officer to perform services as junior medical officer at a hospital. He failed to comply and was prosecuted. At the trial he made the plea that he would be required to give allopathic treatment, to which he had a conscientious objection. He was convicted of a breach of the regulations and fined $25 and $50 costs. He appealed to a higher court, stating that he had expressed his readiness to perform medical services on homeopathic lines and also that he was incapable of performing the services to which he was directed.

In giving judgment the judge said that, while he had every sympathy for any one called on to do anything in direct conflict

with his beliefs, the decision of the magistrate was right. The court had to decide whether or not the officer's decision was lawfully given and approached the case on the basis that the doctor was a fair minded person. It was for the officer to make up his mind whether a person called on to perform certain duties was capable of performing them. In the court's opinion the direction complained of was properly given and the doctor was a person capable of performing the duties required of him. His appeal was therefore dismissed. It may be added that by a war regulation any national service officer may direct any person to perform specified services which he considers the person capable of performing. There is no appeal against this direction, and conscientious objection is recognized only in connection with services in the armed forces.

BRAZIL

(From Our Regular Correspondent)

March 14, 1944.

The Campaign Against Leprosy

Leprosy is an important health problem in Brazil because of the large number of cases and the slightly increasing trend of the disease. A general picture of the situation of leprosy in this country has been given in a previous letter (THE JOURNAL, April 4, 1942). Dr. Ernani Agricola, director of the Division of Leprosy of the National Department of Health, estimates that the present number of leprous persons in Brazil is about 45,000, or 100 per hundred thousand of population, which represents an incidence comparable to that in Russia. The division is now conducting a careful survey. At present a third of these persons with leprosy are interned in eighteen leprosariums scattered all over the country, another third is under the regimen of home visiting by doctors or nurses, representing a wide range of variable control, and the last third is unknown to the health authorities. Nineteen doctors, specialized in the diagnosis of the disease and equipped with all that is necessary for this exacting work, are covering the country, state by state, to take this special and important census. These physicians have had to overcome many handicaps, among them the long distances to be covered, the difficulty of transportation created by the war and the prejudice in relation to leprosy. During the past eight months they have examined 3,228 persons; they have found 331 new cases of leprosy and 70 suspected cases. The work has been completed in the state of Rio de Janeiro (adjoining the Federal District, in which the city of Rio de Janeiro, the capital of the country, is located). A total of 1,017 patients affected with leprosy is now known to the health authorities in this state; this represents 53.5 per hundred thousand of population. According to most authors in the field of leprology, the state of Rio de Janeiro is an active focus of the disease, since a large majority of cases are of the contagious clinical form—the lepromatous.

The Division of Leprosy last year opened a competition for monographs on special subjects in the field of diagnosis, treatment and control of leprosy. These monographs are to be distributed to the physicians of the country with the idea of enlarging the knowledge of general practitioners and increasing the possibilities of diagnosis by them. Prizes have been awarded for the following monographs received in 1943: "History of Leprosy in Brazil, and the Geographic Distribution of the Disease," by Dr. Flavio Maurano, "Etiology and Pathology of Leprosy," by Drs. Luiz M. Bechelli, Flavio Maurano and Abrahão Rotberg, and "Epidemiology and Control of Leprosy," by Dr. Nelson S. Campos. For the present year the following two subjects are to be treated by the monographs in the competition: "Organization and Administration of Leprosariums and of Leprosy Clinic" and "Nervous Symptomatology of Leprosy." The competition is open to all the physicians of the country.

Determination of Vitamin C in Brazilian Fruits

After the war began the Fundos Universitários de Pesquisas para a Defesa Nacional (University Funds of Researches for National Defense) was organized in São Paulo. The money collected is used to investigate Brazilian possibilities in various scientific fields. One of these investigations, the results of which were recently published by Drs. Demosthenes Orsini and Otavio de Paula Santos, is concerned with the determination of vitamin C in Brazilian fruits. By means of the photoelectric indophenol method (Bessey, O. A.: *J. Biol. Chem.* **126**:771 [Dec.] 1938), ascorbic acid was determined in twenty-one different fresh fruits. Some of them are typical Brazilian fruits, such as cashew (Anacardium brasiliense Rodr.), walha (Eugenia uvalha, Camb.), pupunha (Guilielma speciosa, Mart.) and jaboticaba (Myrciaria jaboticaba, Berg.). For each fruit ten or more determinations were made, but only four samples were run for tamarind. This method also permits detection of the presence of other reducing substances and estimation of corrections for their effects. The enzymic method for the estimation of true vitamin C content (Tauber, Henry, and Kleiner, I. S.: *J. Biol. Chem.* **110**:559 [Aug.] 1935) was also used in order to check the results obtained. To make possible the use of both methods, some modifications were made by the authors. Close agreement was obtained in the two methods except for the two varieties of cashew, red and yellow, which left a certain amount of other reducing substances after the ascorbinase action. The Klett-Summerson photoelectric colorimeter with filter 54 was used. The ascorbic acid content was highest for the two varieties of cashew (120.43 and 168.83 mg. per hundred cubic centimeters), walha (114.65 mg. per hundred cubic centimeters), orange (laranja-lima) and papaya; medium for mangos, banana (banana-maçã) and alligator pear, and lowest for pupunha, peaches, banana (banana-nanica), jaboticaba and plum (ameixa do Pará). Only traces of reducing substances were found for grapes and tamarind.

Production of Penicillin in Brazil

Among the various laboratories in Brazil which have attempted to manufacture penicillin, the most productive have been the Raul Leite Laboratories, where Dr. Raymundo M. Aragão succeeded in producing an active drug that was tried with good results in many desperate and difficult cases. Unfortunately the increasing difficulties created by the war have obliged the Raul Leite Laboratories to stop production of the drug. The federal government has now decided to cooperate in the manufacture of penicillin and has appointed a committee to study the necessary measures to help production. The Oswaldo Cruz Institute also is at present attempting to produce penicillin under experimental conditions.

Marriages

PAUL HENRY RINGER JR., Asheville, N. C., to Miss Norma Newcomb of Eagle Grove, Iowa, at Fort Sam Houston, Texas, March 16.

NORMAN ROBIN GOLDSMITH, Bethesda, Md., to Miss Emphia Margaret Fisher of North Judson, Ind., in Washington, D. C., March 24.

MARCUS L. ADERHOLT JR., Lexington, N. C., to Miss Mary Minor Maclin of Montgomery, W. Va., March 25.

JAMIE P. SCOTT, Ashland, Ky., to Miss Frances Fitzgerald of Danville, Va., in Olive Hill, Ky., March 9.

N. JEROME SCHULMAN, New Rochelle, N. Y., to Miss Doris Jean Guttman in San Francisco, February 28.

LEWIS MARION DAVIS, Donalds, S. C., to Miss Caroline Westmoreland of Spartanburg, March 25.

EDWARD STEPHEN GRADY to Miss Mina Eloise McLemore, both of Smithfield, N. C., March 21.

CHARLES BERNSTEIN, Brooklyn, to Miss Sylvia Hayman of Washington, D. C., March 23.

Deaths

Clarence Benjamin Francisco ✠ Kansas City, Mo.; University of Kansas School of Medicine, Lawrence-Kansas City, 1907; professor of clinical surgery at his alma mater; specialist certified by the American Board of Orthopaedic Surgery, Inc.; member of the Kansas Medical Society and the Clinical Orthopaedic Society; fellow and formerly vice president of the American Academy of Orthopedic Surgeons; fellow of the American College of Surgeons; consulting orthopedic surgeon for the American Expeditionary Forces in France and Scotland during World War I with the rank of lieutenant colonel; colonel in the medical reserve corps of the U. S. Army not on active duty; served as chairman of the orthopedic board of the Kansas Crippled Children's Commission; attending orthopedic surgeon, Children's Mercy Hospital; consulting orthopedic surgeon, Kansas City General Hospital; on the staffs of the University of Kansas Hospitals, Kansas City, Kan., Lawrence Memorial Hospital, Lawrence, and St. Mary's and St. Joseph hospitals; orthopedic consultant, Veterans Administration Facility, Wadsworth, Kan.; to be honored by a memorial started by medical students and faculty of the University of Kansas School of Medicine; died in the University of Kansas Hospitals, Kansas City, Kan., February 23, aged 64, of carcinoma of the pancreas and liver.

Horace James Brown ✠ Reno, Nev.; University of Louisville (Ky.) Medical Department, 1904; member of the House of Delegates of the American Medical Association in 1923, 1929, 1938 and 1941; secretary and secretary-treasurer of the Nevada State Medical Association from 1918 to 1943 with the exception of 1924, when he served as president; formerly a member of the state board of medical examiners; fellow of the American College of Surgeons; member of the Pacific Association of Railway Surgeons; division surgeon, Southern Pacific Company; formerly chief surgeon, Tonopah and Goldfield Railroad; at one time president of the Nevada National Life Insurance Company; veteran of the Spanish-American War; held the rank of major in the army reserve and in the Nevada National Guard; at one time served as surgeon for large coal mining companies; served as a member of the governors board for Nevada of the Gorgas Memorial Institute; member and past president of the Reno Lions Club; on the staffs of Washoe General Hospital and St. Mary's Hospital, where he died March 2, aged 63, of acute dilatation of the heart following an operation for intestinal obstruction.

Carl Koller ✠ New York; Medizinische Fakultät der Universität Wien, Austria, 1882; specialist certified by the American Board of Ophthalmology; member of the American Ophthalmological Society, the Association for Research in Ophthalmology, Inc., American Physiological Society, American Society for Pharmacology and Experimental Therapeutics, Inc.; fellow of the New York Academy of Medicine, honorary member of the Society of Physicians of Vienna, Society of Physicians of Budapest and the Royal Academy of Medicine, Rome, Italy; consulting ophthalmic surgeon to the Mount Sinai and Montefiore hospitals and the Hebrew Orphan Asylum; in 1884 introduced cocaine as a local anesthetic in operations on the eye; in 1922 received a gold medal from the American Ophthalmological Society, in 1929 the Kussmaul medal from the University of Heidelberg, Germany, in 1930 the first annual medal of honor from the New York Academy of Medicine and in 1934 the medal of honor of the American Academy of Ophthalmology and Otolaryngology; surgeon, reserve of Imperial Austrian Army; died March 22, aged 86.

Jacob Carl Krafft ✠ Chicago; Long Island College Hospital, Brooklyn, 1899; clinical professor of pediatrics at the Loyola University School of Medicine; formerly professor of pediatrics at the Chicago Polyclinic; member of the House of Delegates of the American Medical Association, 1916-1917; president of the Illinois State Medical Society, 1925-1926; member of the committee for handicapped children and legislative committee of the Chicago Medical Society; specialist certified by the American Board of Pediatrics, Inc.; fellow of the American Academy of Pediatrics and the American College of Physicians; served as a major in the medical corps of the U. S. Army during World War I; attending pediatrician to the Cook County Hospital from 1902 to 1904 and later consulting pediatrician; consulting pediatrician at the City of Chicago Municipal Tuberculosis Sanitarium from 1905 to 1909; attending pediatrician, Norwegian-American, Garfield Park and Walther Memorial hospitals; died at his home in Oak Park, Ill., March 28, aged 69, of coronary thrombosis.

James Isaac Russell ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1901; instructor of clinical surgery at his alma mater from 1909 to 1917; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons and the New York Academy of Medicine; member of the New York Surgical Society; held the rank of major in the medical corps of the U. S. Army during World War I, serving in France with the Roosevelt Hospital Unit; for many years associated with the Roosevelt Hospital, where from 1936 to 1942 he had been director of the department of surgery; served as attending surgeon to the New York Lying-In Hospital, a consulting surgeon to the Home for Incurables and to the John P. Mather Memorial Hospital; formerly a consultant to the Lincoln Hospital; died February 14, aged 68.

William Whitehead Gilfillan, New York; College of Physicians and Surgeons, New York, 1890; member of the Medical Society of the State of New York; fellow of the New York Academy of Medicine and the American College of Surgeons; formerly instructor on eye diseases at the New York Post-Graduate Medical School and Hospital; consulting oculist, Sailors' Snug Harbor Hospital, Staten Island; consulting ophthalmologist, New York House of Refuge; consulting ophthalmic surgeon, New York City Hospital and St. Vincent's Hospital, Staten Island; formerly on the staffs of the New York City Children's Hospital and School, Randall's Island, the French Hospital and the Manhattan Eye, Ear and Throat Hospital; died February 10, aged 75.

Benjamin Franklin Stahl ✠ Haverford, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1887; Philadelphia College of Pharmacy and Science, 1884; past president of the Philadelphia County Medical Society; formerly instructor of physical diagnosis, associate in medicine and lecturer on dietetics of the sick at his alma mater; served as clinical professor of medicine at the Woman's Medical College of Pennsylvania; for thirty-seven years associated with St. Agnes' Hospital, where for eight years he had been medical director; in 1939 received the award of merit from the University of Pennsylvania for his services; for twelve years trustee of the Philadelphia College of Pharmacy and Science; died in the Bryn Mawr Hospital, Bryn Mawr, March 20, aged 80.

Frederick Wheeler Palmer ✠ Colonel, U. S. Army, retired, Oklahoma City; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1894; Army Medical School, 1904; entered the medical corps of the U. S. Army in July 1903 as an assistant surgeon; rose through the various grades to the rank of lieutenant colonel on May 15, 1917; retired from active duty on Sept. 3, 1920 for disability incident to the service; retired with the rank of colonel under the Act of June 21, 1930; veteran of the Spanish-American and World wars; died in the Army and Navy General Hospital, Hot Springs National Park, Ark., February 16, aged 71, of carcinomatosis.

Willis Walley ✠ Jackson, Miss.; Atlanta College of Physicians and Surgeons, 1902; president of the Mississippi State Medical Association, 1917-1918; health officer of Perry County, 1913-1914; served as state sanitary inspector; superintendent of the Mississippi State Charity Hospital from 1918 to 1922 and from 1928 to 1932; medical director of the Dr. Willis Walley Hospital, which he founded; district surgeon for the Illinois Central Railroad and consultant surgeon of the Gulf, Mobile and Ohio Railroad; died April 9, aged 66, of cerebral hemorrhage.

Michael Albert Albl ✠ Cleveland; Western Reserve University Medical Department, Cleveland, 1892; also a pharmacist; an associate of the American College of Physicians; member of the Academy of Medicine of Cleveland, Cleveland Medical Library Association and the Cleveland Clinical Club; on the staff of St. Alexis Hospital, where he died February 19, aged 74, of pneumonia.

Hiram S. Argue, Tacoma, Wash.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1905; member of the Washington State Medical Association; fellow of the American College of Surgeons; first president of the Tacoma Urological Society; served in France during World War I; attending specialist in urology for the U. S. Public Health Service; on the staff of the Northern Pacific Beneficial Hospital; died in the Virginia Mason Hospital, Seattle, February 5, aged 64, of bronchiogenic carcinoma.

Frederick Nelson Baeder, Nutley, N. J.; Duke University School of Medicine, Durham, N. C., 1940; diplomate of the National Board of Medical Examiners; died February 27, aged 29, of rheumatic heart disease.

Clement Wood Bales, Seattle; University of Oregon Medical School, Portland, 1900; died February 10, aged 75, of cerebral hemorrhage.

Daniel Thomas Birtwell, Washington, D. C.; Columbian University Medical Department, Washington, 1900; member of the Medical Society of the District of Columbia; died in the Central Dispensary and Emergency Hospital February 4, aged 69, of congestive heart disease.

Oscar Hermann Bleicher, Andover, Mass.; College of Physicians and Surgeons, Boston, 1937; member of the American Psychiatric Association; died in a Boston hotel January 28, aged 37, of an overdose of morphine sulfate and nitroglycerin, self administered.

George Henry Boskowitz ✠ San Francisco; College of Physicians and Surgeons of San Francisco, 1899; served overseas as a captain in the medical corps of the U. S. Army during World War I; on the staff of St. Francis Hospital, where he died February 28, aged 66, of right renal calculus.

Guy T. Boyd, Fond du Lac, Wis.; Northwestern University Medical School, Chicago, 1898; died January 29, aged 72, of infarct of the heart, coronary thrombosis, mitral stenosis and arteriosclerosis.

Jefferson C. Brock, Carrollton, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1884; died February 17, aged 86, of senility.

Raymond Andrew Budney, Ray Brook, N. Y.; Western Reserve University School of Medicine, Cleveland, 1939; died in the New York State Hospital February 25, aged 31, of pulmonary tuberculosis.

Charles Frederick Clayton, Knoxville, Tenn.; University of Louisville School of Medicine, Louisville, Ky., 1910; member of the Tennessee State Medical Association; on the staffs of St. Mary's Memorial, Fort Sanders and Knoxville General hospitals; died February 11, aged 58, of general carcinomatosis.

Walter Herbert Cobbs, Rockymount, Va.; Medical College of Virginia, Richmond, 1908; died in a Roanoke hospital February 5, aged 62, of cerebral hemorrhage.

Frederick G. Crittenden, Bradford, Pa.; University of Buffalo School of Medicine, 1897; died February 11.

William Lockwood T. Goodison, Larimore, N. D.; Jefferson Medical College of Philadelphia, 1909; also a lawyer; died in Grand Forks January 13, aged 71, of heart disease.

John Walter Greenwood, East Waterford, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1907; member of the Medical Society of the State of Pennsylvania; died February 7, aged 65, of heart disease.

Corwin Thomas Hill ✠ Akron, Ohio; Western Reserve University Medical Department, Cleveland, 1898; past president and vice president of the Summit County Medical Society; at one time member of the city council; on the staffs of the City and St. Thomas hospitals; a founder and member of the staff of Peoples Hospital; died January 1, aged 74.

Raymond Kenneth Hoover, Haddam, Kan.; University of Nebraska College of Medicine, Omaha, 1921; served during World War I; assistant physician from March 1, 1923 to Aug. 11, 1923 at the State Sanatorium for Tuberculosis, Norton; died February 12, aged 50, of bullet wounds.

Woodburn Johnson Hudson ✠ Pleasantville, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1910; member of the American College of Chest Physicians; served during World War I; for many years medical director of the Atlantic County Hospital for Tuberculous Diseases (Pine Rest Sanitarium), Northfield; on the staff of the Atlantic City Hospital, Atlantic City; died in the Hahnemann Hospital, Philadelphia, January 18, aged 57, of cerebral hemorrhage.

Harry Hyzer, Baltimore; Hahnemann Medical College and Hospital of Philadelphia, 1906; died January 10, aged 58, of lobar pneumonia.

James L. Jefferies ✠ Spartanburg, S. C.; University of the City of New York Medical Department, New York, 1889; an Affiliate Fellow of the American Medical Association; on the staff of the Spartanburg General Hospital; died February 9, aged 77, of coronary occlusion.

Richard Irving King, Los Angeles; Bennett Medical College, Chicago, 1909; died January 18, aged 73, of myocarditis.

Walter Eugene Knox ✠ McCook, Neb.; Medical Department of Tulane University of Louisiana, New Orleans, 1909; formerly surgeon and superintendent of the Norcatur Hospital, Norcatur, Kan.; on the staff of St. Catherine of Sienna Hospital; died February 12, aged 59, of coronary thrombosis.

Michael Peter Mahoney ✠ Providence, R. I.; Harvard Medical School, Boston, 1891; for many years on the staff of the Rhode Island Hospital; died in the Jane Brown Memorial Hospital January 21, aged 76, of pneumonia.

Charles Fletcher Maxwell, Seattle; Western Reserve University Medical Department, Cleveland, 1897; died in Fort Steilacoom February 16, aged 73, of hypostatic pneumonia.

Daniel Bernard McCartie, Newark, N. J.; Bellevue Hospital Medical College, New York, 1891; died March 4, aged 72.

John Hamlett Merritt ✠ Woodsdale, N. C.; University of North Carolina School of Medicine, 1906; member of the Person County Board of Health and the board of the Bethel Hill High School; on the staffs of the Community Hospital, Roxboro, and the Watts Hospital, Durham; a director of the Peoples Bank, Roxboro; died February 27, aged 62, of coronary thrombosis with acute dilatation.

Harry Benjamin Neagle, Providence, R. I.; Johns Hopkins University School of Medicine, Baltimore, 1903; formerly epidemiologist, state health department; at one time professor of preventive medicine at the University of Georgia Medical Department, Augusta; served as a health officer in Jackson, Mich., Lewis County, W. Va., and Madera, Calif.; died April 10, aged 66, of cerebral hemorrhage, cerebral thrombosis and arteriosclerotic heart disease.

Erwin Joseph O'Brien ✠ Green Bay, Wis.; Marquette University School of Medicine, Milwaukee, 1928; secretary and treasurer of the Brown-Kewaunee-Door Counties Medical Society; on the staffs of the Mercy Hospital, Oshkosh, St. Mary's Hospital and St. Vincent's Hospital, where he died February 8, aged 40, of fracture of the vertebrae and concussion of the spinal cord.

Timothy W. O'Donovan, Milwaukee; Milwaukee Medical College, 1907; member of the State Medical Society of Wisconsin; on the staff of St. Mary's Hospital; died February 13, aged 60, of myocarditis.

Benson Joseph O'Grady ✠ Hoboken, N. J.; Yale University School of Medicine, New Haven, 1924; served during World War I; school physician; on the staff of St. Mary's Hospital; died February 11, aged 46, of cerebral hemorrhage.

Louis Paparelli, San Antonio, Texas; Independent Medical College, Chicago, 1898; formerly Italian consul at Mexico City; died in the Santa Rosa Hospital February 21, aged 78, of coronary thrombosis.

Harleigh Stephen Peacock ✠ Gasport, N. Y.; University of Buffalo School of Medicine, 1926; formerly on the staff of Our Lady of Victory Hospital, Lackawanna, January 20, aged 43, of coronary thrombosis, ventricular fibrillation and pleuritic effusion.

Clarence Gilbert Pool, Dixon, Ill.; Northwestern University Medical School, Chicago, 1910; member of the Illinois State Medical Society; past president of the Lee County Medical Society; at one time director of the athletic department and professor of hygiene at the Louisiana State Normal College, Natchitoches, La.; served as mayor of Compton; owner of the Compton Hospital, Compton; died in the Dixon Public Hospital February 21, aged 59, of coronary thrombosis.

Willis S. Pritchett, Evansville, Ind.; Louisville (Ky.) Medical College, 1887; entered the U. S. Marine medical service in 1893; secretary of the county health board from 1899 to 1907; for seventeen years on the staff of St. Mary's Hospital and for five years on the staff of the Protestant Deaconess Hospital; died February 16, aged 84, of carcinoma.

John Ray Pryor, Mayfield, Ky.; University of Louisville School of Medicine, 1912; member of the Kentucky State Medical Association; served in France during World War I; formerly county health officer; served as city health officer; until recently a director of the Merit Clothing Company; treasurer of the Mayfield Hospital; died February 26, aged 54, of heart disease.

Boyd Richard Read ✠ Washington, D. C.; George Washington University School of Medicine, Washington, 1912; died in the Providence Hospital, April 13, aged 55, of coronary thrombosis.

Cornelius B. Rogers, Buhler, Kan.; Kentucky School of Medicine, Louisville, 1902; died in the Halstead Hospital, Halstead, January 24, aged 68, of diabetes mellitus following an operation for carcinoma of the cecum.

George Eugene Schoolcraft, Hartwick, N. Y.; Albany Medical College, Albany, 1897; member of the Medical Society of the State of New York; coroner for two terms and health officer for many years; president of the Union National Bank, and president of the board of directors of the Hartwick Library; died in the Mary Imogene Bassett Hospital, Cooperstown, February 27, aged 76, of cerebral hemorrhage.

John Frank Schrader, Bridgeport, Ill.; Medical College of Indiana, Indianapolis, 1895; also a pharmacist; served

during World War I; formerly mayor of Bridgeport and for many years president of the Bridgeport township high school board; died February 9, aged 75, of cerebral hemorrhage.

Mary Scott, Skaneateles, N. Y.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; died February 16, aged 85, of arteriosclerotic heart disease.

Samuel Andrew Scruggs, Americus, Ga.; Atlanta Medical College, 1914; member of the Medical Association of Georgia; served during World War I; on the staffs of the Prather Clinic and the Americus and Sumter County Hospital; member and past president of the Kiwanis Club; died February 26, aged 54, of carcinoma of the sigmoid with metastasis.

John Grundy Seay, Germantown, Tenn.; Kentucky School of Medicine, Louisville, 1901; served as a lieutenant in the medical reserve corps of the U. S. Army during World War I; died February 23, aged 71, of heart disease.

Walter Nelson Sedgwick ✠ New York; Jefferson Medical College of Philadelphia, 1893; at one time medical director of the Security Trust and Life Insurance Company; died in St. Luke's Hospital February 24, aged 73, of pneumonia.

Harry Maxwell Smith, Natchez, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1915; member of the Mississippi State Medical Association; fellow of the American College of Surgeons; served during World War I; died February 17, aged 57, of hypertensive heart disease and congestive heart failure.

Lieut. Julian Sydney Adleman, M. C., A. U. S., 1911-1943

Arthur Kern Spiering, Berwyn, Ill.; University of Illinois College of Medicine, Chicago, 1916; member of the Illinois State Medical Society; served on the staff of the West Suburban Hospital, Oak Park; died in Fond du Lac, Wis., February 2, aged 51, of heart disease.

Albert Cross Stewart ✠ Tacoma, Wash.; University and Bellevue Hospital Medical College, New York, 1902; major in the medical corps of the U. S. Army during World War I, serving as a psychiatrist in a hospital in France; medical superintendent and owner of the Puget Sound Sanatorium, Puyallup; died in the Tacoma General Hospital February 3, aged 71, of pneumonia following injuries received in an automobile accident.

J. Boyd Swonger ✠ Beaumont, Texas; Ohio Medical University, Columbus, 1901; served during World War I; died in the Veterans Administration Facility, Waco, January 26, aged 75, of coronary arteriosclerotic heart disease with myocardial damage and insufficiency.

Philip Cook Thomas, New York; New York Homeopathic Medical College and Hospital, New York, 1899; formerly assistant professor of obstetrics at his alma mater; served on the staff of the Metropolitan Hospital; died in the Orange General Hospital, Orlando, Fla., January 24, aged 70, of mesenteric thrombosis.

Dennie Marvin Thomasson ✠ Lynchburg, Va.; University of Virginia Department of Medicine, Charlottesville, 1900; at one time on the Lynchburg public health staff; fellow of the American Proctologic Society; died February 18, aged 65.

James Algeron Toole, Stewart, Miss.; Memphis (Tenn.) Hospital Medical College, 1907; formerly health officer of Quitman County; died in Winona February 1, aged 60, of heart disease.

Delos Ashley Turner, Maywood, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; served during World War I; formerly attached to the U. S. Veterans Bureau in Reno, Nev.; at one time county physician, Esmeralda County, Nev., and district health officer, Nevada State Board of Health; on the staff of the Veterans Administration Facility, Hines, where he died February 18, aged 66, of acute coronary thrombosis.

Smith Jay Underwood, Hale Center, Texas (licensed in Texas under the Act of 1907); died January 3, aged 69, of cerebral hemorrhage.

Arthur Grayson Vaden, Temperanceville, Va.; University College of Medicine, Richmond, 1895; member of the Medical Society of Virginia; died in the Medical College of Virginia Hospital, Richmond, February 1, aged 70.

Ramon Montgomery Vail, Thompsonville, Conn.; Harvard Medical School, Boston, 1918; found dead in his hotel room in Springfield, Mass., February 4, aged 50, of chronic myocarditis.

Salvatore Louis Vitelli, Yonkers, N. Y.; Regia Università degli Studi di Bologna, Facoltà di Medicina e Chirurgia, Italy, 1937; resident physician on the staff of St. Joseph's Hospital; died January 27, aged 33.

William Richard Warren ✠ Key West, Fla.; University of Pennsylvania Department of Medicine and Surgery, Philadelphia, 1904; secretary of the Monroe County Medical Society; at one time associated with the U. S. Public Health Service; served during World War I; formerly health officer of Key West; died February 14, aged 67, of coronary occlusion.

Royal Latham Watson ✠ Joliet, Ill.; Rush Medical College, Chicago, 1904; a captain in the medical corps of the U. S. Army during World War I; served on the grade and high school boards; formerly chief of staff at Silver Cross Hospital and on the staff of St. Joseph's Hospital; past president of the police pension board; died in Daytona Beach, Fla., February 8, aged 63, of coronary thrombosis.

Capt. Norman Epstein, M. C., A. U. S., 1911-1943

Theodore C. Wiggins, Great Neck, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1888; died January 26, aged 88, of chronic myocarditis and arteriosclerosis.

Richard Arnett Williams, Chicago; Meharry Medical College, Nashville, Tenn., 1902; died in the Provident Hospital February 23, aged 64, of cerebral hemorrhage.

Claude Le Roy Wills, Sinclair, Wyo.; University of Nebraska College of Medicine, Omaha, 1906; member of the Wyoming State Medical Society; secretary of the Carbon County Medical Society for fourteen years; served overseas as captain in the medical corps of the U. S. Army; served in the army of occupation for three years, retiring with the rank of major; died February 13, aged 68, of uremia.

KILLED IN ACTION

Julian Sydney Adleman, Medford, Mass.; Middlesex College of Medicine and Surgery, Waltham, 1935; commissioned a first lieutenant in the medical corps, Army of the United States, and began extended active duty on Sept. 21, 1942 with the medical detachment, 15th infantry; killed in action in the North African area July 19, 1943, aged 32.

Norman Epstein, Brooklyn; University of Louisville (Ky.) School of Medicine, 1938; served internship at the Jewish Hospital in St. Louis and a residency in the Jewish Hospital in Brooklyn; commissioned a first lieutenant in the medical corps, Army of the United States, June 9, 1942 and later promoted to captain; killed in action in New Britain, southwest Pacific, Dec. 22, 1943, aged 32.

Bureau of Investigation

CEASE AND DESIST ORDERS

Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission, in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 increased the Food and Drug Administration's control of the advertising claims and statements made on the label of a medicine or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in circulars, newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission by virtue of the Wheeler-Lea Amendment.

THE JOURNAL has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added rights. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual, manufacturer or distributor cited is ordered to cease and desist from practices which have been declared objectionable. In some cases the claims cited have been discontinued by the firms several months (or even longer) before the issuance of the order. Abstracts of some of the orders issued in 1943 follow in this form: name of product, name of distributor, date of issuance of complaint, date of issuance of Cease and Desist Order and terms of order.

Atmoray.—Atmoray, Inc., and Atmozone, both of Portland, Ore.; complaint issued Nov. 20, 1941; order issued April 7, 1943. Order directed these concerns to cease representing that the Atmoray is a cure or remedy for, or has any value in the treatment of, respiratory diseases generally, tuberculosis, pneumonia, anemia, kidney or prostate gland disorders, infectious diseases generally, sugar diabetes, rheumatism, cancer and other ailments, or that it is an effective oxidizing, germicidal or disinfecting agent. The order further directed the promoters to discontinue any advertisements which failed to reveal that the safety of the device depends on the output of the particular machine used, the size of the room in which it is employed, the ventilation, and the length of time that the mechanism is operated; that the concentration of ozone should not in any case be permitted to exceed one-half part of ozone per million parts of air; that proximity to the machine should be avoided, and that inhalation of an excessive amount of ozone may cause irritation of the respiratory organs.

Chen Yu Nail Lacquer.—Associated Distributors, Inc., and J. L. Younghusband, Paul Rowatt and Howard A. Younghusband; complaint issued April 22, 1942; order issued May 22, 1943. Order directed respondents to discontinue representing that the product is incapable of chipping or flaking, or effectively resists cracking or peeling under all conditions of use; to cease using Chinese letters or symbols or any picturization of Chinese objects in connection with the promotion of this preparation, or representing that it is made in or imported from China or any other foreign country, or that its formula is of Chinese or other foreign origin.

Electro Magnetic Nerve Vitalizer.—Charlotte Brandenburg, San Antonio, Texas; complaint issued Oct. 16, 1941; order issued March 19, 1943. Order directed the respondent to cease representing that this device, also known as "Electro Magnetic Vibrator," has therapeutic value in the treatment of any disease or condition of the body. The Federal Trade Commission found that the heat, vibration and magnetic field that the device produced were so slight that their effects would have no therapeutic value, and that any benefit from its use would be purely psychologic. The promotor was ordered to cease claiming that the use of her device would benefit the nervous system in any way, increase circulation, or improve the quality of the blood; that it would relieve congested conditions, pain, soreness or inflammation, or be of any value in the treatment of paralysis, arthritis, neuralgia, apoplexy, arteriosclerosis, lumbago, influenza or deterioration of the tissues, reduce blood pressure, stimulate the action of the liver and heart or tear down diseased tissue.

Gordon Detoxifier.—Milton Irwin, Walter G. Berg and David W. Miles, trading as Associated Laboratories, Minneapolis; complaint issued March 10, 1942; order issued May 4, 1943. Order directed the respondents to discontinue any advertising which used the term "hydro-surgery" to describe their device or otherwise represent that whatever results it may accomplish are comparable to those of surgery, or any advertisement employing the word "Detoxifier" to designate the device or otherwise represent that it will rid the body of toxins; further, the order prohibited representations that this mechanism is an effective treatment for a long list of ailments, such as appendicitis, asthma, colitis, high or low blood pressure, heart, kidney, bladder or liver complications, lumbago, migraine, rheumatism, sinus trouble, or ulcers of the stomach or bowels, or that such disorders are almost invariably caused by intestinal toxemia; that the device will cleanse the small intestine, massage or strengthen either intestine, purify the blood stream, re-establish a normal peristalsis or natural muscular activity of the intestines, or have any value in excess of that possessed by the ordinary enema; that the introduction of ozone into the body by means of this device accelerates the healing process, or that the Detoxifier is an effective treatment for constipation, except in so far as it may temporarily relieve by flushing the lower bowel.

"Hollywood" Cosmetics.—Phil, David A. and Joanne B. Howe, trading as Howe and Company, Seattle; complaint issued March 23, 1942; order issued May 11, 1943. Order directed these persons to cease using the word "Hollywood" to describe any products which are not made in Hollywood, and the words "Favorite of the Stars" to represent that these preparations are recognized by leading motion picture actresses as possessing superior cosmetic properties; further, the respondents were ordered to discontinue the words "carrot," "avocado," "honey and almond" or "turtle oil" to describe any product which does not contain these respective ingredients; to discontinue representing that "Creme Moderne" penetrates the skin, that the product formerly designated "Cleansing Creme, Carrot Type" induces natural lubrication of the skin; that the former "Creme Nocturne, Tissue Type" nourishes the skin or tissues or corrects dry skin, and that what had been called "Creme Nocturne, Avocado Type" supplies vitamins or other nourishment to the skin, stimulates dormant or inactive muscles, or rebuilds tissues.

McNeil's Magic Remedy.—McNeil Drug Company, Inc., and Associated Advertising Agency, Inc., both of Jacksonville, Fla.; complaint issued March 6, 1943; order issued May 8, 1943. Order directed these concerns to discontinue the following misrepresentations: That the preparation is a cure or remedy for rheumatism, neuritis, lumbago, gout, glandular swellings, backache, or pain in the bones, muscles or legs, or has any value in alleviating pain associated with such conditions beyond that afforded by a mild analgesic; that it has any effect in straightening limbs drawn out of shape by rheumatism, offers any benefit which cannot be obtained through use of other preparations, or has any significant value as a tonic. The respondents were further ordered to discontinue any advertising which failed to reveal that the product should not be used in cases of nausea, vomiting, or other symptoms of appendicitis, or by persons suffering from goiter or tuberculosis, provided, however, that if the label directions contain a warning as to the potential danger in using this product, such advertisements need carry only the warning: "Caution: Use only as directed." There is on record a stipulation which the McNeil concern entered into with the Federal Trade Commission in September 1937, in which it agreed to discontinue certain advertising misrepresentations for its product as an alleged remedy for rheumatism, neuritis, lumbago, gout and glandular swellings.

Pow-A-Tan Herb Tonic.—Pow-A-Tan Medicine Company, Huntington, W. Va.; complaint issued August 23, 1942; order issued April 27, 1943. Order directed the concern to discontinue certain misrepresentations, such as that this product is a cure or remedy or competent treatment for all ailments, such as rheumatism, hemorrhoids, la grippe and lumbago, and to cease and desist from disseminating advertisements which represent, among other things, that the nostrum is a cure or remedy for neuritis, arthritis, rheumatism, indigestion, la grippe, liver ailments, stomach gas or female complaints; that it will prevent constipation or acute diseases such as tuberculosis, colds, appendicitis, catarrh or typhoid, or produce a general tonic effect on the body.

Sal Hepatica.—Bristol-Myers Company, Hillside, N. J.; complaint issued Nov. 11, 1938; order issued May 11, 1943. Order directed the concern to discontinue any advertisements which represented, among other things, that the product will correct systemic (as distinguished from gastric) acidity, or restore the alkaline reserve of the body; that it constitutes a cure or effective treatment for rheumatism, arthritis, neuritis or unnatural fatigue or nervousness; that it furnishes any relief for upset stomach in excess of its value in reducing gastric acidity; that it will enable anyone to stay clear-headed or alert, free the intestinal tract of poisons or be an effective treatment for indigestion. These prohibitions, however, do not prevent the respondent from representing that Sal Hepatica is a competent laxative which will evacuate the lower intestinal tract and relieve discomforts arising from occasional dietary indiscretions. It is worth noting that in June 1937 the Bristol-Myers Company had entered into a stipulation with the Commission, agreeing to discontinue certain advertising misrepresentations.

Sal-Ro-Cin.—Pasadena Products, Inc., Pasadena, Calif.; complaint issued Nov. 13, 1939; order issued Feb. 25, 1943. Order directed the concern to discontinue any advertising that failed to reveal that Sal-Ro-Cin may be dangerous through frequent or continued use, and should not be taken in excess of the recommended dosage of 1 to 2 tablets 2 to 4 times daily. The order provided, however, that if the directions for use, wherever they appear on the label, should contain a warning of the potential dangers in the use of this product, the advertisements need contain only the statement: "Caution: Use only as directed."

Stuart's Laxative Compound Tablets.—F. A. Stuart Company, Marshall, Mich., and Benson & Dall, Inc., Chicago, an advertising agency; complaint issued April 30, 1942; order issued March 15, 1943. Order prohibited the concern from representing that the product is safe or harmless and may be used without ill effects. Also they were ordered to reveal in the advertising that the preparation should not be used in case of abdominal pains or other symptoms of appendicitis, provided that such advertising need contain only the statement, "Caution: Use only as directed" if the labeling directions for use should contain a warning to the same effect. As a matter of fact, some of the representations mentioned above were among those which the Stuart concern had agreed to withdraw from its advertising in a stipulation that it entered into with the Federal Trade Commission in March 1941.

Correspondence

BASAL TEMPERATURE GRAPHS AND OVULATION

To the Editor:—In connection with the proposal made by Dr. Pendleton Tompkins (THE JOURNAL, March 11, p. 698) that basal temperature graphs be used to determine the date of ovulation, I should like to make the following suggestions in order to render the application of the method easier. In doing so, I am in no way passing judgment on the reliability of the method itself.

1. Oral temperatures are just as satisfactory for this purpose as rectal ones and are certainly easier to obtain.

2. Evening temperatures, taken just prior to going to bed, show the same cyclic variations as do morning ones. Precautions to be observed: rest in a chair for about an hour, no cold drinks for one hour nor hot drinks for half an hour before temperatures are taken. From the standpoint of timing inseminations so that they follow a rise in body temperature, evening temperatures are decidedly superior to morning ones.

3. Still better indications of temperature change can be obtained from two sets of figures, both morning and evening.

4. Most subjects can be taught to read the thermometer to one fourth of a division, or 0.05 F., though some may have to use a magnifying glass. More accurate readings thus obtained make it unnecessary to graph the temperatures, as an inspection of a column of successive figures reveals a sharp change at a glance.

5. Aside from determining the time of ovulation and as an early pregnancy test, the method can be used as a very good index of the imminence of menstruation. It is thus advisable for women who have no definite premenstrual symptoms and who, for one reason or another, wish to know when they are going to menstruate, to take their morning or evening temperature during the latter part of the cycle: a precipitous drop indicates the onset of menstruation in one to three days.

NATHANIEL KLEITMAN, PH.D.,
Department of Physiology,
University of Chicago.

A SUGGESTION FOR THE PREPARATION OF PATIENTS HAVING GASTRO-INTESTINAL STUDIES

To the Editor:—The roentgen examination of the upper gastrointestinal tract employing a thick barium paste is handicapped when large quantities of fluid are present in the stomach. Patients are frequently seen having amounts of fluid in the stomach sufficient to interfere with the examination in the absence of pyloric obstruction and of a history of recent ingestion of fluids, and they will also exhibit disturbance of gastric motility. Such patients often admit smoking one or more cigarets shortly before the examination. These observations confirm the experimental studies of Rosenblum (*California & West. Med.* **49**:191 [Sept.] 1938), Schnedorf and Ivy (THE JOURNAL, March 11, 1939, p. 898) and Ehrenfeld and Sturtevant (*Am. J. M. Sc.* **201**:81 [Jan.] 1941). In view of the present day frequency of early morning preprandial smoking and the manifest desirability of examining the stomach in a resting state, patients should be instructed to refrain from tobacco as well as from food and fluid before such examinations are made. This is particularly true when observations are made on the functional behavior of the stomach as revealed by peristalsis, secretion, mucosal pattern and pylorospasm.

WILLIAM A. EVANS JR., Captain, M. C., A. U. S.

"SPLENECTOMY IN PREGNANCY COMPLICATED BY THROMBOCYTOPENIA PURPURA HEMORRHAGICA"

To the Editor:—I am interested in the article by Dr. Polowe in the March 18 issue entitled "Splenectomy in Pregnancy Complicated by Thrombocytopenia Purpura Hemorrhagica." The author says "I believe this is the first case to be reported."

I wish to point out that the case reported is not the first case of its kind treated successfully by splenectomy. A few years ago in civilian practice I had under my observation a young primigravida who in her fifth month of gestation developed clinical and laboratory signs of thrombocytopenic purpura hemorrhagica. I well recall the recurrent nosebleeds, bleeding gums, purpura, thrombocytopenia, and the anxious night calls. After a short trial of snake venom therapy at home the patient was admitted to the ward medical service of the Mount Sinai Hospital, New York, where she received additional snake venom and transfusion therapy prior to operation. Dr. Rosenthal recommended splenectomy, which was done by Dr. John Garlock. The patient made a remarkable recovery and continued with her pregnancy. For further details as to follow-up, and recording in the literature (by others) I refer Dr. Polowe to Dr. Rosenthal. Recently I have heard through one of my patient's relatives that she has gone through a normal pregnancy within the past year.

Dr. Polowe's case has added interest, since there had been clinical signs of purpura hemorrhagica for five years before pregnancy. My patient developed her purpura for the first time in the fifth month of her first pregnancy.

SOL. GROSSMAN, Captain, M. C., A. U. S.

USE OF THE TERM "DEGERM"

To the Editor:—Since its introduction in 1938 the word degerm has come into occasional use, though it has not yet found its way into the medical dictionary. The noun degermation has sometimes appeared in the incorrect and meaningless form degermination. An instance of this error may be found in THE JOURNAL, March 11, page 709.

The following quotation (*J. Infect. Dis.* **63**:301 [Nov.-Dec.] 1938) indicates the proper meaning and use of the term:

> "We have coined this word to express an action not accurately described by "cleanse," "disinfect," "sterilize" or any other available English term. To cleanse is to remove dirt or grease; it is a word without bacteriological significance. To disinfect an object is, properly speaking, to rid it of pathogenic germs, so that it is no longer infected, as in the case of wounds, or potentially infectious, as in the case of skin, instruments, etc. To sterilize an object (in its bacteriological sense) is to destroy all bacteria in or on it. To degerm an object is to reduce, by any means, the number of microbes, pathogenic or nonpathogenic, in or on it.
>
> The terms differ also in degree of accomplishment implied. To disinfect an object (successfully) means fully to eliminate its infectious quality. Likewise, to sterilize means to carry through destruction of the germs in question to completion. The word degerm, however, refers simply to the act of reduction, and not to the bacteriological state at its termination. Thus:
>
> Mechanical cleansing, followed by use of effective germicides, may disinfect the hands, but it is hardly possible to sterilize them, however zealously one may continue to degerm them. Or: The rate of degermation has a vital relationship to the problem of disinfection.

PHILIP B. PRICE, M.D.,
University of Utah School of Medicine,
Salt Lake City.

COMMENT.—Webster gives degerm but degerminate and degerminator. No doubt degermate and degermator better express the meaning to be conveyed.—ED.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, April 29, page 1314.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part I-II.* Various centers, May 1-3. Exec. Sec., Mr. E. S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Various large cities, May 8. *Oral.* Chicago, June 17. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Chicago, June 8-10. Final date for filing application is May 20. *Written.* Various centers Oct. 16. Candidates in military service may take examination at their place of duty. Final date for filing application is August 15. Asst. Sec., Dr. W. A. Werrell, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY. Chicago, June 5. Sec., Dr. Paul C. Bucy, 912 S. Wood St., Chicago.

AMERICAN BOARD OF OBSTETRICS & GYNECOLOGY. *Oral. Part II.* Pittsburgh, June 7-13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OPHTHALMOLOGY: New York, June 2-5. Chicago, Oct. 5-7. Sec., Dr. S. Judd Beach, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Oral and Written. Part I.* Chicago, New Orleans, New York and San Francisco, October. Final date for filing application is August 1. Sec., Dr. G. A. Caldwell, 3503 Prytania St., New Orleans.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* New York City, June 1-4. Chicago, Oct. 4-7. Sec., Dr. Dean M. Lierle, Universty Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PATHOLOGY: *Oral and Written.* Chicago, June 7-8. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Sept. 22. *Oral.* St. Louis, Nov. 8-9. Final date for filing application is Aug. 15. Sec., Dr. C. A. Aldrich, 115½ First Ave. S.W., Rochester, Minn.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Liability of Corporation for Negligence of Physician Employee.—Konnoff suffered a rupture of a gastric ulcer of the stomach. He was taken immediately to the Richmond Hospital in Contra Costa County, Calif., and the physician defendant Fraser was engaged to assume charge of the case. Apparently the physician delayed operating for over twelve hours, and the patient died. It was claimed in a suit that was subsequently instituted in San Francisco County by the wife and children of the patient that Konnoff's death resulted from the negligence of the physician in delaying to operate and that the physician should have operated forthwith and closed the opening caused by the rupture and thereby have prevented the further escape of stomach contents into the abdominal cavity. Joined as defendants in the suit were the physician, the Richmond Hospital, the Todd-California Shipbuilding Corporation and the Industrial Indemnity Exchange, apparently another corporation. It was alleged that the two corporations were the owners of the Richmond Hospital and that the physician was a servant, agent and employee of the corporate defendants. Presumably the intended legal effect of these allegations was to impose liability on the corporations for the negligence, if any, of the physician. The physician moved for a change of venue from San Francisco to Contra Costa County, the county in which the negligence, if any, of the physician occurred and the county in which he lived. The plaintiffs contended that the courts of San Francisco County had jurisdiction, inasmuch as the principal places of business of the two corporations were in San Francisco. The physician contended that the corporations were improperly joined as defendants, that no cause of action was stated against either of them and that the venue of the proceeding was properly in Contra Costa County. From an order denying his motion for a change of venue the physician appealed to the district court of appeal, first district, division 2, California.

A defendant, said the court, is entitled to a change of venue to the county of his residence if no cause of action is stated against the codefendants residing in the county in which the complaint is filed. Does the complaint here in question state a cause of action against either of the corporate defendants? From an examination of the complaint it appears that the plaintiffs are seeking to recover for the alleged malpractice of the physician and are attempting to state a cause of action against the corporate defendants under the doctrine of respondeat superior. The physician contended that no cause of action was stated against the corporate defendants, relying on authorities holding generally that neither a corporation nor any unlicensed person may practice, directly or indirectly, the learned professions of medicine, dentistry and the like, and on authorities indicating that the members of the learned professions have the status of independent contractors rather than the status of employees and therefore neither a corporation nor any unlicensed person may be held liable under the doctrine of respondeat superior for the malpractice of a member of such a profession. To the contrary effect, the plaintiffs cited *Inderbitzen* v. *Lane Hospital*, 124 Cal. App. 462, 12 P. (2d) 744, 13 P. (2d) 905, *Hedlund* v. *Sutter Medical Service*, 51 Cal. App. (2d) 327, 124 P. (2d) 878, and *Criss* v. *Angelus Hospital Ass'n*, 13 Cal. App. (2d) 412, 56 P. (2d) 1274, in all of which cases corporations were held liable for the malpractice of physician employees. In each of the cases cited by the plaintiffs, continued the court, the corporate defendant had contracted with the patient to furnish the professional services and had furnished such professional services through members of the profession employed by the corporation for the purpose of complying with the terms of its contract with the patient. In other words, the contract for professional services had been made by the patient with the corporation rather than with the member of the profession who performed the services, and it was that point on which those decisions turned. But the facts alleged in the complaint in this case do not bring it within the rule of the cases just cited. There is, for instance, no allegation in the complaint to show that prior to Feb. 10, 1942 there was any contract with any person or corporation to furnish medical services to the deceased. In fact, the affirmative allegation in the complaint with respect to the contract for the furnishing of the medical services in question is that

> On the 10th day of February 1942, at about the hour of 10: 30 a. m., said David Konnoff suffered a rupture of a gastric ulcer of the stomach, and thereupon employed the said L. H. Fraser as a physician.

This affirmative allegation shows that the patient employed the physician defendant, a member of the medical profession, to furnish the medical services in question. We find nothing in the remaining allegations of the complaint sufficient to impose liability on the corporate defendants for the alleged malpractice of the physician.

The court accordingly concluded that, since no cause of action against the corporate defendants was stated in the complaint, the proper venue for the suit was in Contra Costa County and in effect ordered the cause transferred to the courts of that county.—*Konnoff v. Fraser, 145 P. (2d) 368 (Calif., 1944).*

Workmen's Compensation Acts: Preexisting Tuberculosis Allegedly Aggravated by Trauma.—Moore submitted to an operation in 1933 for an abscess of the right lung. Thereafter he seemed to have led a vigorous, active life. From 1938 on to about two weeks after the occurrence of the industrial accident here involved he worked, so he testified, for the employer at hard labor for "ten hours a day, six days a week." In the course of his employment July 2, 1941 he was struck in the back by a piece of lumber and suffered intense pain. However, after resting for a few minutes he resumed work. Three days later apparently he was still suffering pain and he called on Dr. Kelley, who could find no external evidence of the injury.

Dr. Kelley, however, desired to "tape" the area involved, but the workman did not permit him to do so until July 8. Moore continued to work, but his condition bothered him. On July 15 roentgenograms disclosed tuberculosis and he was put to bed. A week later he was taken to a state sanatorium, where Dr. Riley ascertained that the upper and lower parts of the left lung were affected. Apparently around September 7, after fluid had been removed from the left lung, by means of a roentgenogram a large cavity was observed in the lower half of the lung. Moore subsequently instituted proceedings under the workmen's compensation act of Arkansas, alleging a causal relation between the industrial injury he suffered and his condition. At the hearing before the workmen's compensation commission of Arkansas an affidavit from Dr. Riley was received in evidence which stated:

> In view of the presence of the cavity revealed on the picture taken September 7, . . . it appears that this is an old process. . . . It is highly improbable that this could have taken place after July 2, 1941. From [Moore's history] and evidence revealed by the x-ray, I do not believe his present disability is due to the alleged injury.

At the hearing Dr. Fulmer also expressed views similar to those of Dr. Riley. Dr. Kelley's diagnosis of the workman's condition, which also seems to have been received in evidence, was "traumatic pleurisy to left side following injury, resulting in pleural effusion, associated with tuberculosis." From an award in favor of the workman the employer appealed to the circuit court, Grant County, Ark., which affirmed the award. The employer then appealed to the Supreme Court of Arkansas.

If, said the Supreme Court, the workman was able to work ten hours a day, six days a week, and had not suffered inconvenience because of a pleurisy or a tuberculous condition prior to the alleged industrial accident, it is not necessary for his present disability to be compensable that he should have been physically unimpaired when the injury now complained of occurred. It is sufficient if the accident, coupled with a nondisabling malady, produced disability which would not have occurred at that time but for the trauma. This result may be reached without doing violence to the expert testimony adduced on behalf of the employer. Dr. Riley thought it highly *improbable* that the lung cavity and accrual of fluid could have developed subsequent to July 2, and he did not *believe* Moore's disability was due to the injury. This belief, it will be observed, is based on what the witness thought was highly improbable—not *impossible*. Dr. Kelley thought the injury produced disability. Each physician was expressing an opinion based on experience and medical information. Here, as was said in *Missouri Pacific R. Co.* v. *Ward,* 195 Ark. 966, 115 S. W. (2d) 835:

> We are, therefore, confronted with possibilities and probabilities, conclusions and opinions, theories and counter theories, as applied to an inexact science.

In *Herron Lumber Company* v. *Neal,* 205 Ark. 1093, 172 S. W. (2d) 252, we quoted with approval from the opinion of the Supreme Court of California in *Pacific Employers Ins. Co.* v. *Industrial Accident Commission,* 19 Cal. (2d) 622, 122 P. (2d) 570, in which it was said that

> Circumstantial evidence is sufficient to support an award [of the Compensation Commission] and it may be based upon the reasonable inferences that arise from the reasonable probabilities flowing from the evidence; neither absolute certainty nor demonstration is required.

It was the commission's duty to determine whether Moore was truthful when he said he had been working sixty hours a week before July 2 and that disability and the injury occurred simultaneously, even though it be conceded that an inactive pleural condition and tuberculosis were present. Again, it was the commission's province to harmonize the inconsistencies between testimony given by the physicians in the case. The commission concluded that disability could have resulted from the accident, and, since we cannot say that this result is contrary to known laws of medical science against which proof may not prevail, the award in favor of the workman must be affirmed.—*J. L. Williams & Sons, Inc. v. Moore, 177 S. W. (2d) 761 (Ark., 1944).*

Society Proceedings

COMING MEETINGS

American Medical Association, Chicago, June 12-16. Dr. Olin West, 535 N. Dearborn St., Chicago 10, Secretary.

American Association for the Surgery of Trauma, Chicago, June 9-10. Dr. Gordon M. Morrison, 520 Commonwealth Ave., Boston, Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., June 8-10. Dr. Charles C. Higgins, 2020 E. 93d St., Cleveland, Secretary.

American Association of Industrial Physicians and Surgeons, St. Louis, May 8-11. Dr. Edward C. Holmblad, 28 East Jackson Blvd., Chicago, Managing Director.

American Association of Plastic Surgeons, Philadelphia, May 25-27. Dr. Frederick A. Figi, 102 Second Ave., S.W., Rochester, Minn., Secretary.

American Association on Mental Deficiency, Philadelphia, May 11-15. Dr. Neil A. Dayton, Mansfield Training School, Mansfield Depot, Connecticut, Secretary.

American Broncho-Esophagological Association, New York, June 6. Dr. Paul H. Holinger, 700 N. Michigan Ave., Chicago, Secretary.

American College of Allergists, Chicago, June 10-11. Dr. Fred W. Wittich, 401 LaSalle Medical Bldg., Minneapolis 2, Secretary.

American College of Chest Physicians, Chicago, June 10-12. Dr. Paul H. Holinger, 500 N. Dearborn St., Chicago, Secretary.

American College of Radiology, Chicago, June 14. Mr. Mac F. Cahal, 540 N. Michigan Ave., Chicago, Secretary.

American Diabetes Association, Chicago, June 11. Dr. Cecil Striker, 630 Vine St., Cincinnati 2, Secretary.

American Federation for Clinical Research, Chicago, June 12-13. Dr. Thomas M. Durant, 3401 N. Broad St., Philadelphia 40, Secretary.

American Gastro-Enterological Association, Chicago, June 12-13. Dr. J. Arnold Bargen, 102 Second Ave. S.W., Rochester, Minn., Secretary.

American Gynecological Society, Hershey, Penna., June 19-21. Dr. Howard C. Taylor Jr., 842 Park Ave., New York 21, Secretary.

American Laryngological Association, New York, June 7-8. Dr. Arthur W. Proetz, 3720 Washington Blvd., St. Louis, 8, Secretary.

American Laryngological, Rhinological and Otological Society, New York, June 9-10. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, Chicago, June 10-11. Dr. Carroll L. Birch, 2045 Sedgwick St., Chicago, Secretary.

American Neurological Association, New York, May 19-20. Dr. Henry Alsop Riley, 117 E. 72d St., New York 21, Secretary.

American Ophthalmological Society, Hot Springs, Va., May 29-31. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Physicians' Art Association, Chicago, June 12-16. Dr. F. H. Redewill, 536 Flood Bldg., San Francisco, Secretary.

American Proctologic Society, Chicago, June 11-15. Dr. W. H. Daniel, 1930 Wilshire Blvd., Los Angeles 5, Secretary.

American Psychiatric Association, Philadelphia, May 15-18. Dr. Winfred Overholser, St. Elizabeth's Hospital, Washington, D. C., Secretary.

American Psychoanalytic Association, Philadelphia, May 13-15. Dr. Robert P. Knight, 3617 W. Sixth Ave., Topeka, Kansas, Secretary.

American Society for Clinical Investigation, Atlantic City, May 8. Dr. Wesley W. Spink, University Hospitals, Minneapolis, Secretary.

American Therapeutic Society, Chicago, June 10. Dr. Oscar B. Hunter, 1835 I St. N.W., Washington 6, D. C., Secretary.

American Urological Association, St. Louis, June 19-22. Dr. Thomas D. Moore, 899 Madison Ave., Memphis, 3, Tenn., Secretary.

Association for Research in Ophthalmology, Chicago, June 13. Dr. B. F. Payne, School of Aviation Medicine, Randolph Field, Texas, Secretary.

Association for the Study of Internal Secretions, Chicago, June 12-13. Dr. Henry H. Turner, 1200 N. Walker St., Oklahoma City, Secretary.

Association of American Physicians, Atlantic City, May 9. Dr. Joseph T. Wearn, Lakeside Hospital, Cleveland, Secretary.

California Medical Association, Los Angeles, May 7-8. Dr. George H. Kress, 450 Sutter Street, San Francisco 8, Secretary.

Georgia, Medical Association of, Savannah, May 9-12. Dr. Edgar D. Shanks, 478 Peachtree St. N.E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 16-18. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.

Kansas Medical Society, Topeka, May 10-11. Dr. F. R. Croson, 112 West Sixth Street, Topeka, Secretary.

Massachusetts Medical Society, Boston, May 23-24. Dr. Michael A. Tighe, 8 Fenway, Boston 15, Secretary.

Mississippi State Medical Association, Jackson, May 9-10. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

National Tuberculosis Association, Chicago, May 10-12. Dr. Charles J. Hatfield, 1790 Broadway, New York, Secretary.

New Hampshire Medical Society, Manchester, May 16. Dr. C. R. Metcalf, 5 S. State St., Concord, Secretary.

New York, Medical Society of the State of, New York, May 8-11. Dr. Peter Irving, 292 Madison Ave., New York 17, Secretary.

North Dakota State Medical Association, Fargo, May 7-9. Dr. L. W. Larson, 221 5th Street, Bismarck, Secretary.

Rhode Island Medical Society, Providence, May 24-25. Dr. William P. Buffum, 122 Waterman St., Providence 3, Secretary.

Society for Investigative Dermatology, Chicago, June 13. Dr. S. W. Becker, 55 E. Washington St., Chicago, Secretary.

South Dakota State Medical Association, Huron, May 21-23. Dr. Roland G. Mayer, 22½ S. Main St., Aberdeen, Secretary.

Texas, State Medical Association of, Dallas, May 10-11. Dr. Holman Taylor, 1404 W. El Paso Street, Fort Worth, Secretary.

West Virginia Medical Association, Wheeling, May 15-16. Mr. Charles Lively, P. O. Box 1031, Charleston, Executive Secretary.

Wyoming State Medical Society, Casper, May 28. Dr. M. C. Keith, Capitol Building, Cheyenne, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

13:245-280 (Feb.) 1944

Appendicitis Problem: Analysis of 1,752 Consecutive Appendectomies. W. R. Meeker.—p. 245.
Infectious Processes Complicating and Sequelae to Clean Surgery: Healing by First Intention. E. V. Caldwell.—p. 252.
*Liver Extract in Acne Eruptions, Abscesses and Scars: Therapeutic Role of Experimental Fractions. W. Marshall.—p. 255.
*Chewing Gum Fever. H. B. Searcy.—p. 266.

Liver Extract in Acne.—Marshall found that liver extracts produced improvement in patients with acne vulgaris. Not all commercial liver extracts which he used contained the active factor or factors which produced this effect. An extract prepared by himself was given to 25 unselected patients with acne vulgaris. A moderate or pronounced improvement took place in 68 per cent of the cases. With the use of a further improved extract, 89 per cent of 27 unselected patients showed a moderate or pronounced improvement. This high incidence of improvement was further checked independently by two dermatologists on 23 patients with acne vulgaris. Eighty-three per cent of these patients were "cured" or moderately improved. Seventeen per cent showed slight improvement, and there were no failures. The author advocates liver therapy as a therapeutic adjunct to established methods.

Chewing Gum Fever.—Searcy observed that increased temperature in a child subsided on discontinuing the use of chewing gum. A whole family troubled with fever became normal when the chewing gum habit was discontinued. Test on healthy subjects in the first aid room of a chewing gum manufacturing company revealed that there was an average rise in oral temperature of 0.4 degree F. after five minutes' chewing. The range of temperature change was from 0.4 to 1.2 degrees F. The temperature after ten minutes' rest returned to the level recorded before chewing the gum or to a slightly lower temperature. Chewing of soda crackers likewise increased the oral temperature. The testing of the effects of gum chewing on the temperature in a group of nurses showed an increase in oral temperature but no increase in rectal temperature. The degree of elevation of the oral temperature from chewing apparently depends on the amount of muscular effort used. Chewing gum can produce a false rise in temperature that may confuse a diagnosis.

American Heart Journal, St. Louis

27:1-144 (Jan.) 1944

Intimate Account of Early Experience with Coropary Thrombosis. J. B. Herrick.—p. 1.
Precordial Electrocardiogram. F. N. Wilson, F. D. Johnston, F. F. Rosenbaum, H. Erlanger, C. E. Kossmann, H. Hecht, N. Cotrim, R. M. de Oliveira, R. Scarsi and P. S. Barker.—p. 19.
*Toxic Reactions to Intravenous Injection of Mercurial Diuretics. J. Wexler and L. B. Ellis.—p. 86.
Experiments with Calculated Therapeutic and Toxic Doses of Digitalis: V. Comparative Effects of Toxic Doses of Digitalis and of Pitressin on Electrocardiogram, Heart and Brain. W. H. Dearing, A. R. Barnes and H. E. Essex.—p. 96.
Id.: VI. Comparative Effects of Toxic Doses of Digitalis and of Prolonged Deprivation of Oxygen on Electrocardiogram, Heart and Brain. W. H. Dearing, A. R. Barnes and H. E. Essex.—p. 108.
Intrapericardial Aneurysm Caused by Congenital Syphilis. C. Dominguez, R. F. Schärer and E. R. Pietrafesa.—p. 121.

Toxic Reactions After Intravenous Injection of Mercurial Diuretics.—Wexler and Ellis, after reviewing the literature on toxic reactions to the intravenous injection of mercurial diuretics, add 2 more fatal reactions to mercupurin to the growing list. The first fatal reaction occurred in a white woman aged 24 with congenital pulmonary stenosis, who had chronic cardiac failure. This patient had previously received a total of 164 cc. of mercupurin intravenously over a period of eight months, with fair diuretic results. As her general cardiac status deteriorated, the response to mercupurin became less favorable. The dose was therefore gradually increased from 2 cc. until she was receiving 3 cc. of mercupurin three times a week. Within one to two minutes after the final intravenous injection of 3 cc. she became dyspneic and cyanotic and died within a few minutes. Postmortem examination confirmed the diagnosis of congenital pulmonary stenosis. Cardiac sclerosis of the liver also was found, together with the usual pathologic accompaniments of congestive heart failure. The second fatality occurred in a white woman aged 27 with nephrosis. She had received thirteen previous intravenous injections of mercupurin. She expressed great dislike for the injection because of an extremely unpleasant sensation which she could not describe. Within thirty seconds after the final intravenous injection of 2 cc. she became unconscious and rigid. She had tonic convulsions. The pulse could not be felt. There was pallor of the face. Gasping respirations occurred a few times, but cardiac function could not be restored by injecting stimulants into the heart and giving artificial respiration. At postmortem examination the kidneys showed the pathologic changes of chronic "nephrosis." Nonfatal reactions have varied in severity and may be divided into immediate and delayed reactions. The fatal and the immediate nonfatal reactions probably result from a direct toxic effect of mercury on the heart, whereas the delayed nonfatal reactions are incidental to the diuretic action of the drug. Since mercurial diuretic drugs are valuable therapeutic agents in the treatment of congestive heart failure, and since the frequency of severe or fatal reactions to their administration is low, the usefulness of these drugs outweighs their possible danger. It is well to remember that at the present time no fatalities have been reported after intramuscular injection and that the diuretic response often compares favorably with that which results from intravenous injection.

American Journal of Hygiene, Baltimore

39:1-128 (Jan.) 1944

Illustrated Key to Eggs of Thirty Species of Brazilian Anophelines, with Several New Descriptions. O. R. Causey, L. M. Deane and M. P. Deane.—p. 1.
Seasonal Variations in Numbers of Anopheles Albimanus and A. Pseudo-Punctipennis Caught in Stable Traps in Central America. H. W. Kumm and H. Zúniga.—p. 8.
Epidemiology of Jungle Yellow Fever in Eastern Colombia. J. C. Bugher, J. Boshell-Manrique, M. Roca-Garcia and E. Osorno-Mesa. —p. 16.
Antigenicity of Yellow Fever Vaccine Virus (17D) Following Fifty-Seven Subcultures in Homologous Immune Serum. J. C. Bugher and H. H. Smith.—p. 52.
Efficacy of Vaccination in Prevention of Yellow Fever in Colombia. J. C. Bugher and A. Gast-Galvis.—p. 58.
*Primary Atypical Pneumonia, Etiology Unknown (Part I). J. H. Dingle, T. J. Abernethy, G. F. Badger, G. J. Buddingh, A. E. Feller, A. D. Langmuir, J. M. Ruegsegger and W. B. Wood Jr. —p. 67.

Primary Atypical Pneumonia.—Dingle and his collaborators report investigations on 244 patients with respiratory diseases admitted to the hospital at Camp Claiborne. Clinical examinations and roentgenograms of the chest were made routinely on all patients admitted to the respiratory disease wards and were repeated at frequent intervals. All patients whose roentgenograms revealed lesions were examined thoroughly and followed closely throughout the course of their illness. The diagnosis of atypical pneumonia was restricted to those patients in whom a definite lesion in the lungs was demonstrated roentgenographically and in whom the diagnosis of pneumococcic pneumonia or other conditions which might produce such a lesion could be excluded on clinical and laboratory grounds. Among the 244 cases there were 69 of atypical pneumonia, 34 of bronchitis resembling atypical pneumonia, 11 of pneumococcic pneumonia, 57 of acute tonsillitis and 53 of other respiratory diseases. For the purpose of obtaining additional cases for clinical and epidemiologic study 1,188 hospital records of patients admitted during the preceding year were reviewed and classified. Additional 288 cases were found in which diagnosis of atypical pneumonia could be made with

reasonable certainty. A report of the pathologic features of the single fatal case observed at Camp Claiborne is presented. Sulfonamide treatment was found ineffective on a reasonable trial. Many patients were more uncomfortable when receiving these drugs. There appears to be a gradual transition in symptoms, signs and severity from cases of atypical pneumonia to those of bronchitis resembling atypical pneumonia, and from the latter group to cases of other respiratory illnesses. The main differences between these diagnostic groups depend on duration and severity of symptoms and physical signs rather than on characteristic symptomatology.

American Journal of Ophthalmology, Cincinnati

27:1-108 (Jan.) 1944

Massive Bilateral Preretinal Type of Hemorrhage Associated with Subarachnoidal Hemorrhage of Brain, with Case Report and Pathologic Findings. L. C. Drews and J. Minckler.—p. 1.
*Epidemic Keratoconjunctivitis from Subjective Viewpoint. T. D. Allen.—p. 16.
Temporal Arteritis: Case Report with Eye Findings. L. T. Post and T. E. Sanders.—p. 19.
Military Ophthalmology. W. T. Davis.—p. 26.
Emile Javal: Appreciation. B. Chance.—p. 45.
Endophthalmitis Phacoanaphylactica. R. G. Scobee and H. C. Slaughter.—p. 49.
Visual Acuity at Low Brightness Levels. M. Luckiesh and A. H. Taylor.—p. 53.
*Orthoptics for the Infant Squinter, One to Four Years Old. Edith V. Roth.—p. 57.
Use of Prisms in Orthoptics. Clara Burri.—p. 61.
Dermoid Tumor of Sclera. L. F. Carter.—p. 67.
Technic of Tonometry and Care of Tonometers. M. J. Schoenberg.—p. 70.
New Suture for Use in Muscle Recession Operations. C. B. Foster.—p. 71.

27:109-216 (Feb.) 1944

Tarsoconjunctival Sliding-Graft Technics for Eyelid Reconstruction. H. S. Sugar.—p. 109.
Development of System of Intracapsular Cataract Extraction. D. B. Kirby.—p. 124.
Comparison of Ocular Reactions of Pigmented and Albino Rabbits to Normal Horse Serum: Intraocular Followed by Intravenous Injection. T. F. Schlaegel Jr.—p. 137.
Present Limits of Gonioscopy. P. C. Kronfeld and H. Isabelle McGarry.—p. 147.
Torsion in Persons with No Known Eye Defect. T. G. Hermans.—p. 153.
High Congenital Myopia with Convergent Strabismus. R. C. Gamble.—p. 159.
Coats's Disease. J. Laval.—p. 163.
Postoperative Endogenous Infection of Eye with Recovery: Report of 2 Cases. D. Kravitz and L. J. Duest.—p. 167.
Essential Atrophy of Iris. F. McK. Ruby.—p. 171.
Geographic Distribution of Ocular Infections, with Special Reference to Tropical and Subtropical Countries. C. Weiss.—p. 175.

Epidemic Keratoconjunctivitis.—The objective signs of epidemic keratoconjunctivitis are a gradually increasing conjunctival hyperemia and folliculosis, moderate to severe conjunctival edema, some sticky secretion, no pus, occasional pseudomembrane, slight photophobia, considerable edema of the lids, and regional adenopathy; later often superficial corneal spots varying greatly in size, density, and numbers; seldom iritis. There is a gradual return to normal, as a rule in three to six weeks, except that the corneal spots linger and usually interfere with visual acuity for several months. Allen describes epidemic keratoconjunctivitis from the subjective standpoint, having developed it thirteen days after contact with a patient. He deplores the careless moment when after examining the patient and before washing his hands he must have fingered his own eyelids. He pleads for thorough cleanliness. Giving a description of his subjective experiences, he admits that he had a peculiar mixture of the scientific attitude of the physician with the irritation of the restless patient. He thinks that cold boric acid compresses, intravenous vitamin C and encouragement were the factors which helped him most.

Orthoptics for Squinters One to Four Years Old.—Roth thinks that orthoptic treatment of squinting children between 1 and 4 years of age is a mistake. She maintains that these children are not capable of anything but play. The awakening of latent fusion requires much intense concentration, which is often a real task for the adult. To attempt such teaching with a child under 4 is to take the chance of creating a distaste in the infant's mind for all orthoptic exercises—a distaste that will always be remembered. It is better to let a child wait for straight eyes until he is ready to cooperate.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

73:1-106 (Feb.) 1944

Principles of Treatment in Peripheral Nerve Injuries. M. T. Schnitker.—p. 53.
*Aerodontalgia. D. F. Mitchell.—p. 62.
Psychiatric Experiences in Tropical Theater of Operations. S. Peal.—p. 68.
Treatment of Fulminating Meningococcic Infections. H. M. Thomas Jr.—p. 78.
Veterinary Service in Iceland. F. A. Todd.—p. 85.
Photoroentgen Technic. A. W. Fuchs.—p. 90.
New Elastic Splint for Wrist Drop. F. H. Mayfield.—p. 96.
Evaporation Beds for Kitchen and Shower Waste. H. A. Johnson.—p. 98.
Dentistry in German Army. R. E. Frutiger.—p. 100.

Aerodontalgia.—Aerodontalgia is experienced at altitudes ranging from 8,000 to 40,000 feet. The cases studied at Randolph Field, Texas, tend to support the opinion that the pain is due to the presence of some preexisting pathologic change in the pulp or periapical tissues. The incidence of aerodontalgia among personnel exposed to artificially lowered pressures in a low pressure chamber was about 1.2 per cent. The majority of patients were referred to Mitchell after they experienced dental pain in the low pressure chamber. A few were pilots who voluntarily reported to the clinic in search of the reason for dental pain which had occurred at altitudes ranging from 8,000 to 10,000 feet. A complete dental history was obtained from each patient reporting to the dental clinic. Symptomatic evidence, usually supported by x-ray examination, has pointed to the presence of pathologic changes in and around the tooth in question in all cases. Thirteen of the 25 cases observed were apparently due to a subacute pulpitis under deep cavities or restorations. The treatment resolved itself into nine extractions of abscessed teeth, the placement of seven temporary zinc oxide and eugenol fillings, and the repair of an amalgam restoration. Ten of the 25 patients studied had good results with no recurring pains, while 15 of this number were not available for further observation. Aerodontalgia might be brought about by the lowered temperatures of high altitudes or by the inhalation of cold oxygen. The pain might be induced by permitting the oral fluids or air to reach the sensitive dentin of the walls or floor of the cavities or by the loosening of a restoration, permitting it to be dislodged from the cavity.

Endocrinology, Springfield, Ill.

34:77-142 (Feb.) 1944

Effect of Adrenocorticotropic Hormone on Anterior Pituitary of Normal Young Male Rat. A. A. Koneff.—p. 77.
Role of Thyroid in Cytologic Response of Pituitary to Low Intake of Iodine. A. Chapman and G. M. Higgins.—p. 83.
Influence of Thyroid Gland on Pituitary Gonadotropic Activity in Rabbit. J. P. Chu.—p. 90.
*Preparation, Biologic Assay and Properties of Relaxin. A. A. Abramowitz, W. L. Money, M. X. Zarrow, R. V. N. Talmage, L. H. Kleinholz and F. L. Hisaw.—p. 103.
Concentration of Relaxin in Blood Serum of Pregnant and Postpartum Rabbits. S. N. Marder and W. L. Money.—p. 115.
Importance of Female Reproductive Tract in Formation of Relaxin. F. L. Hisaw, M. X. Zarrow, W. L. Money, R. V. N. Talmage and A. A. Abramowitz.—p. 122.

Relaxin.—It was demonstrated in 1926 that relaxation of the symphysis pubis in a guinea pig was under hormonal control of a substance called relaxin. This hormone was found in the blood of several species of pregnant mammals, in extracts of rabbit placentas and in corpora lutea of the sow. The discovery that relaxation of the symphysis pubis of a guinea pig could be induced with estrogen and progesterone led many investigators to doubt the existence of a separate hormone relaxin. Abramowitz and his co-workers reinvestigated this problem, their aim being to obtain a preparation of relaxin by a simple method, to make a quantitative study of its activity and to determine whether active solutions of hormone have estrogenic or progestational effects. They were able to obtain relaxin by a simple method of extraction from sow corpora lutea. Their relaxin preparation was negative for estrogenic and progestational effects.

Journal of Mount Sinai Hospital, New York

10:503-762 (Jan.-Feb.) 1944. **Partial Index**

The Mechanism of Lung Clearance and Some Practical Implications. J. G. M. Bullowa.—p. 508.
Metastatic Brain Tumor with Bronchogenic Carcinoma as Primary Source. J. H. Globus.—p. 533.
Influence of Neurohormonal Regulations on Anaphylaxis and Allergy. J. Harkavy.—p. 565.
Hematogenous Tuberulosis with Recurrent Disseminations: Report of 2 Cases. H. Hennell.—p. 575.
Bronchopulmonary Moniliasis: Case Report with Pathologic Study. A. E. Jaffin.—p. 586.
Development of Technic of Blood Transfusion Since 1907, with Special Reference to Contributions by Members of Staff of Mount Sinai Hospital. R. Lewisohn.—p. 605.
Coley's Mixed Toxins of Erysipelas and Prodigiosus: Report of 2 Cases of Inoperable Sarcoma Treated by Coley's Method. H. Lilienthal.—p. 623.
Spontaneous Pneumothorax. M. Taschman.—p. 684.
Subtotal Pancreatectomy for Hypoglycemia. A. L. Umansky.—p. 698.
Constrictive Pericarditis: An Atypical Case; Extreme Ascites; Cure by Pericardiectomy. W. Hitzig.—p. 722.
Patent Ductus Arteriosus: Ligation. E. E. Arnheim.—p. 727.
Subacute Streptococcus Viridans Endarteritis Superimposed on Patent Ductus Arterious: Recurrence After 12½ Years. Recovery Following Operative Treatment. A. S. W. Touroff.—p. 729.
Massive Pulmonary Embolism: Continuous Intravenous Morphine Drip; Recovery. H. Neuhof.—p. 731.
Multiple Aneurysms of Indeterminate Origin: Arterial Repair. S. S. Bernstein.—p. 736.

Journal of Nutrition, Philadelphia

27:1-122 (Jan.) 1944

Nutrition of Cotton Rat (Sigmodon Hispidus Hispidus). J. M. McIntire, B. S. Schweigert and C. A. Elvehjem.—p. 1.
Effect of Excessive Dietary Sodium and Potassium on Carbohydrate Metabolism of Normal Rats. R. C. Lewis Jr., F. S. McKee and B. B. Longwell.—p. 11.
*Retention of Nutritive Quality of Beef and Pork Muscle Proteins During Dehydration, Canning, Roasting and Frying. C. E. Poling, H. W. Schultz and H. E. Robinson.—p. 23.
Availability of Calcium and Phosphorus of Defluorinated Rock Phosphate for Rat. B. F. Barrentine, L. A. Maynard and J. K. Loosli.—p. 35.
Cooper Metabolism and Requirement of Young Women. Ruth M. Leverton and Emily S. Binkley.—p. 43.
Folic Acid, Biotin and Pantothenic Acid Deficiency and the Liver Storage of Various Vitamins in Rats Fed Succinylsulfathiazole in Highly Purified Rations. L. D. Wright and A. D. Welch.—p. 55.
Secondary Anemia Due to Prolonged and Exclusive Milk Feeding Among Shoshone Indian Infants. M. Pijcan and C. A. Elkin.—p. 67.
Blood Plasma Ascorbic Acid Values Resulting from Normally Encountered Intakes of This Vitamin and Indicated Human Requirements. Mary L. Dodds and Florence L. MacLeod.—p. 77.
*Actions of Benzedrine and Propadrine in Control of Obesity. M. L. Tainter.—p. 89.
Studies of Comparative Nutritive Value of Fats: I. Growth Rate and Efficiency of Conversion of Various Diets to Tissue. H. J. Deuel Jr., E. Movitt, Lois F. Hallman and F. Mattson, with technical assistance of Evelyn Brown.—p. 107.

Retention of Nutritive Quality of Beef and Pork Proteins.—Poling and his collaborators compared the nutritive value of the meat proteins in raw cured pork shoulder, canned cured pork shoulder, roast pork shoulder, fried pork shoulder, dehydrated pork and dehydrated beef in eight to ten week feeding experiments on growing albino rats. The studies indicated that the nutritive quality of the proteins of cured pork shoulder may be slightly lowered by a commercial canning process. The proteins of dehydrated pork muscle and fried fresh pork shoulder are slightly superior in nutritive quality to those of canned cured pork shoulder, roast fresh pork shoulder and dehydrated beef muscle. Since the evidence indicates some probability of a slight damage to the proteins of cured pork shoulder by the described commercial canning procedure, this may be an indication that a more severe processing schedule might damage the pork proteins to a greater extent. These investigations have not determined whether the schedules used in canning other meats, these schedules often being more severe than for cured pork, are damaging to the respective proteins, and also whether the nutritional quality of the muscle proteins of other species is changed by heat treatment.

Amphetamine and Propadrine in Obesity.—Tainter found that amphetamine (benzedrine) and propadrine cause a loss of body weight in white rats in a manner comparable to that reported for patients. Energy output changes do not explain the decreases in body weight. While amphetamine increased the oxygen consumption for about six hours after subcutaneous injection, it did not change the total oxygen used in twenty-four hours. Subcutaneous injections of propadrine did not change the metabolism even temporarily. Both amphetamine and propadrine slowed the rate of passage of food through the gastrointestinal tract. The slower passage through the intestine apparently did not modify appreciably the digestion or assimilation of food, since it produced no change in the dry weight of the stools. The food intake was impaired by these drugs, especially during the first few days of medication when the weight changes were greatest. A tolerance to the appetite effect of the drugs quickly developed, so that food consumption returned to normal after about a week. These results indicated that amphetamine and propadrine might be of greatest value in those cases of obesity in which control of the appetite was the most pressing need, and when the dosage could be kept low and duration of medication short to minimize the development of tolerance. Propadrine was weaker than amphetamine but, since it lacked the unpleasant central excitant effects of the latter, might well be used first. Amphetamine or propadrine can probably serve only as an adjuvant to the commonly employed measures in controlling obesity.

New England Journal of Medicine, Boston

230:125-156 (Feb. 3) 1944

Peritoneoscopy in Liver Disease. E. B. Benedict.—p. 125.
*Dicumarol Therapy in Thrombotic Emergencies. J. A. Evans.—p. 131.
Abscess of Spleen. I. N. Wolfson.—p. 135.
Syphilis (concluded). G. M. Crawford.—p. 138.

Dicumarol Therapy in Thrombotic Emergencies.—Evans states that at the Lahey Clinic thrombotic emergencies have been treated since August 1941 by one or more of three methods: paravertebral procaine sympathetic block, venous section and ligation, and anticoagulant therapy with dicumarol, with or without heparin. Fifty-six patients were treated by dicumarol or dicumarol combined with heparin. Of the four deaths that occurred, two can be ascribed directly to dicumarol poisoning and hemorrhage. Hemorrhagic phenomena were evident in 8 cases (14 per cent). These complications emphasize the dangers and disadvantages of dicumarol therapy, but the obvious advantages to date appear to outweigh the dangers of this preventive method if adequate laboratory facilities are available and proper precautions are observed. The principal precaution to be observed is the determination of the morning prothrombin time before ordering the daily maintenance dose of dicumarol. The combined use of heparin and dicumarol is considered safe only if the doses of heparin are controlled by twice daily determinations of the coagulation time of the blood, and the doses of dicumarol by daily determinations of the prothrombin time. One benign and not fatal pulmonary embolism occurred in a series of 46 cases of venous thrombosis treated by the anticoagulant dicumarol alone or combined with heparin. This series of 46 cases of thrombophlebitis is not large enough to justify the conclusion that venous ligation is an unnecessary procedure. If a patient is over 50 and has had a warning benign pulmonary embolism, venous ligation is still indicated. If statistical proof can be accumulated from other workers in this field, venous ligation may prove unnecessary except in rare cases of recurrent emboli occurring in spite of anticoagulation therapy.

New Orleans Medical and Surgical Journal

96:291-340 (Jan.) 1944

*Bagassosis: Case Report. S. C. Jamison, Margaret Strange Bryan and Jane Matthews Day.—p. 291.
Experimental Studies on Urea Peroxide with Clostridium Welchi in Vitro and in Vivo. M. Kepl, E. Hauser, G. Caldwell and A. Ochsner.—p. 294.
World Wars and Their Bearing on Medical Practice, with Special Reference to Digestive and Tropical Diseases. G. B. Eusterman.—p. 295.
Diagnostic Confusion Between Acute Appendicitis and Pelvic Inflammatory Disease. F. F. Boyce.—p. 303.
Hypertension: Role of Renin and Angiotonin in Maintaining Blood Pressure. D. C. Musser.—p. 308.
Portal Cirrhosis with Reference to Recent Therapy. E. W. Edwards.—p. 314.
Tuberculosis and Pregnancy. E. Hull.—p. 321.
War and Women Doctors. Elizabeth Bass.—p. 324.

Bagassosis.—According to Jamison and his collaborators involvement of the lung due to the inhalation of bagasse dust constitutes a clinical entity known as bagassosis. It is a rare

condition, occurring apparently only in those individuals who are exposed to the dried material. The authors report the history of a Negro aged 32 who was hospitalized with severe dyspnea. For eight months prior to admission the patient's work consisted in moving bales of damp cane grindings from the sugar house to the fields. During this time he remained in good health. One month before admission his work was changed to that of moving the bagasse from the fields to the railroad cars. This bagasse was dry, and often when the wind blew the air was so dusty that the workmen would have to turn away from the bagasse in order to breathe. They wore no masks. Percussion showed resonance over both lung areas. Tuberculin skin tests were negative. Smears from three sputum samples were negative for acid fast organisms. Examinations of the sputum for tubercle bacilli by the concentration method were likewise negative on three occasions. Fungi were searched for but not found. The roentgenogram taken on admission showed infiltration throughout both lung fields, which had a slightly miliary appearance. No specific medication was given. Examination on the twenty-fourth hospital day showed slight clearing of the chest. Follow-up examination two and four mouths later revealed that the clearing of the lung progressed while the patient worked as a wood cutter. This case is of interest because it shows that bagassosis may be contracted even when working outdoors with the dried material and that the disease is not a permanent condition and recovery may occur over a period of a few months.

New York State Journal of Medicine, New York

44:225-336 (Feb. 1) 1944

*Frequency and Course of Cancer in Diabetics. F. Ellinger and H. Landsman.—p. 259.
Response to Treatment of Peptic Ulcer. E. F. Driscoll and A. H. Aaron.—p. 266.
*Jaundice: Hepatocellular Catarrhal Icterus and Hepatitis Following Use of Yellow Fever Vaccine: Clinicopathologic Comparisons. I. W. Held and A. A. Goldbloom.—p. 270.

Cancer in Diabetic Patients.—Ellinger and Landsman point out that cancer and diabetes mellitus are predominantly diseases of the older population and both are characterized by a disturbance in the carbohydrate metabolism. During the years 1933 to 1941 a total of 1,280 patients with diabetes mellitus were seen at the Montefiore Hospital for Chronic Diseases in New York City. Thirty-nine of these had a malignant tumor. This cancer incidence of 3.04 per cent is in agreement with a cancer incidence of 2.95 per cent derived from 14,332 cases of diabetes collected from the world literature. This incidence is definitely higher than the cancer incidence of 0.46 per cent in the general population. In agreement with previous observations, a more virulent course of malignant growth in diabetic patients has been found with increasing severity of the diabetic condition. The average lifetime after onset of tumor symptoms in the series presented in this paper decreased from 4.6 years in mild diabetes to 0.9 year in severe diabetes. In agreement with the remarkably long average survival time of 4.6 years in mild diabetes, a closer analysis showed that 9 out of the 39 patients with cancer and diabetes lived for five years and longer after onset of tumor symptoms. All but 1 of these patients had mild diabetes. It is highly suggestive that mild diabetes produces a retardation of malignant growth and of spread and growth of metastases. Results of experimental cancer research as well as some clinical observations are quoted in explanation of the higher cancer incidence among the diabetic as well as of the apparent retardation of malignant growth in mild diabetes. Both phenomena could be traced to the abnormal carbohydrate metabolism.

Jaundice Following Use of Yellow Fever Vaccine.—Held and Goldbloom differentiate between regurgitation icterus, absorption icterus and retention icterus. The so-called absorption icterus is due to changes in the parenchyma of the liver and is therefore a truly hepatocellular icterus. Hepatocellular icterus is classified pathologically into (1) noninflammatory, parenchymatous catarrhal icterus, (2) inflammatory, postvaccinal hepatitis and (3) rarer changes causing jaundice, including cirrhosis, acute yellow atrophy, hepatic carcinoma and stones of the liver. Hepatocellular catarrhal icterus and postvaccinal hepatitis are symptomatically alike. Duration of the prodromal stage in catarrhal icterus is six to nine days. It is considerably shorter than in postvaccinal hepatitis, in which the gastrointestinal symptoms may precede jaundice by several weeks. The average course of hepatocellular catarrhal icterus is five or six weeks, with complete and rapid recovery. In postvaccinal hepatitis, although the jaundice may not be pronounced, convalescence is extremely slow. The patient may have disturbed appetite, slight secondary anemia and elevation of bilirubin in the blood for several months. Postvaccinal hepatitis is most likely due to a virus contained in some of the stocks of vaccine for yellow fever. Postvaccinal hepatitis is pathologically a true hepatitis but fortunately reversible in the majority of instances. The simple Volhard water test, which is of great diagnostic and prognostic value, should be carried out more often. Proteins should constitute an important part of the dietetic regimen. When the patient cannot tolerate proteins because of digestive disturbance, amino acids should be given intravenously. Intravenous administration of dextrose in the preicteric stage is an important prophylactic measure against possible dehydration. It served the immediate purpose of lessening the severity of jaundice and also shortens the course of the disease. Treatment is symptomatic. In protracted jaundice injections of 10 to 20 units of insulin daily are of great value.

South Carolina Medical Assn. Journal, Florence

40:1-26 (Jan.) 1944

Diagnosis and Treatment of Bleeding Diseases. R. R. Kracke.—p. 1.
Tropical Medicine During and After War. H. E. Meleney.—p. 6.
"John Jones and His Job with Sonoco." W. H. Bailey.—p. 11.

40:27-52 (Feb.) 1944

Some of South Carolina's Medical Problems. W. A. Smith.—p. 27.
Clinical Experiences with Diethylstilbestrol. J. D. Guess.—p. 30.
Practical Points in Intravenous Therapy Technic. S. G. Stubbins.—p. 33.

Southern Medical Journal, Birmingham, Ala.

37:63-122 (Feb.) 1944

Effects of Accelerated Program of Medical Schools on Faculty and Students After Eighteen Months' Experience. S. E. Dorst.—p. 63.
Elimination of Abdominal Colostomy and Other Intestinal Fistulas. W. W. Babcock.—p. 66.
Nonmalignant Intestinal Obstruction. M. J. Henry.—p. 69.
Recent Experimental Studies on Effects of Immobilization of Denervated Muscles. O. L. Huddleston.—p. 72.
Interrelation of Impairment of Genital and Rectal Support. C. W. Barrett.—p. 77.
*Continuous Caudal Analgesia in Obstetrics. J. Carangelo.—p. 80.
*Continuous Caudal Analgesia in Normal and Complicated Labor: Report of Death. P. P. Volpitto, R. A. Woodbury, B. E. Abreu and R. Torpin.—p. 83.
Treatment of Acute Medical Emergencies. E. B. Ferris.—p. 87.
Hematologic Problems in General Practice of Medicine. R. R. Kracke.—p. 90.
Community Blood and Plasma Transfusion Service. P. I. Hoxworth and G. Block.—p. 96.
Public Health Problems in Cantonment and Extracantonment Areas. R. H. Hutcheson.—p. 100.
*Jeep Disease (Pilonidal Disease of Mechanized Warfare). L. A. Buie.—p. 103.
Role of Sinusitis in Human Pathology. M. M. Cullom.—p. 110.

Continuous Caudal Analgesia in Obstetrics.—Carangelo employed continuous caudal analgesia in 61 deliveries. The average length of time the analgesia was continued was three and three-quarters hours, the shortest was forty-five minutes and the longest was twelve hours. The average metycaine dosage was 1.4 Gm. The maximum dosage given was 6 Gm. No supplementary anesthesia was needed in any case. All babies were in excellent condition and cried spontaneously. No pain was felt, despite forceps or episiotomy repair. Pelvic and perineal relaxation is pronounced. Although the urge to bear down disappears there is no motor paralysis, and the patient may cooperate by bearing down voluntarily. Uterine tonicity is maximal, and thus blood loss is reduced to a minimum. Continuous caudal anesthesia is of practical value in dystocia and may be administered to give an exhausted patient a rest during a protracted labor with gratifying results. Labor appears to be shortened in most cases. The method is ideal in the presence of cardiac or pulmonary conditions. The procedure should be of most value in the hands of the obstetrician who prefers a

selective power of anesthesia and endeavors to adapt the anesthesia to a patient rather than accommodate the patient to an anesthetic routine. It is a procedure which requires special training to obtain satisfactory results and should be given only by persons experienced in the technic.

Continuous Caudal Analgesia in Normal and Complicated Labor.—Volpitto and his associates report their experiences with continuous caudal analgesia in 77 cases. Procaine hydrochloride or metycaine hydrochloride in either 1 or 1.5 per cent solutions was used. Thirty cc. of one of these solutions was placed in the caudal canal. Technical difficulties were encountered in 5 of the 77 cases. In 2 of this group the failure was due to the needle being outside the caudal canal. In 3 the needle was in the proper place, but no analgesia developed because a 0.15 per cent solution was supplied through error. Nausea and vomiting occurred in about one fourth of the patients during caudal analgesia. Two of the patients developed infections at the site of caudal injection. Both were obese. One maternal death occurred approximately twenty-five minutes after a total of 30 cc. of 1.5 per cent metycaine had been injected. The author stresses that labor pains should be well established before the caudal analgesia is begun. The area of injection should be cleansed before and after the analgesia. It is advisable to cover the skin puncture with collodion at the end of the procedure in order to minimize the possibility of infection. If pain relief is not complete within twenty minutes after injection of 30 cc. of either 1 per cent or 1.5 per cent of the anesthetic solution it can be attributed to either the needle being outside the caudal canal or to an anatomic abnormality of the sacrum. The first is more likely to be the case. Extremely obese women are poor subjects for caudal analgesia not only because of anatomic difficulties in properly placing the needle but also from the danger of infection. This technic may be well suited for patients having cardiovascular disease, all types of pulmonary disease, nephritis, toxemia of pregnancy and eclampsia. The second stage of labor is definitely prolonged. The incidence of outlet forceps is definitely increased in primiparas. It may be unwise to employ analgesia in the presence of intrauterine hemorrhage. Both procaine and metycaine have toxic potentialities, should be used with caution and should be preceded by a short acting barbiturate. The maternal death which occurred in this series was attributed to circulatory collapse. The patient should have been watched more closely. Continuous caudal analgesia is not a routine method applicable to all patients in labor.

Jeep Disease: Pilonidal Disease of Mechanized Warfare.—Buie says that in 1940 in the United States Navy the number of sick days occasioned by pilonidal disease exceeded those occasioned either by hernia or by syphilis. At first many induction boards rejected men with pilonidal conditions. Later it was found necessary to become more liberal, and in accordance with an official order only those were rejected who presented conditions too extensive to permit early rehabilitation by surgical operation. Consequently pilonidal problems became prominent in Army and Navy medical circles. It was thought that all patients should be treated surgically in order that interference with active duty at a later date might be obviated. It was feared that riding on jeeps, trucks and tanks would play havoc even with the innocent sacrococcygeal dimple. Consequently a large number of operations began. Soon it was found that the method did not "proceed according to plan." A review of the records led to the following recommendations: 1. Symptomless "sacral dimples" or sinuses without discharge should not disqualify and should not be operated on. 2. No excisions should be done in mild cases with infrequent symptoms. 3. Even in severe cases excision should not be performed routinely. 4. If one operation fails, a second operation must not be performed. 5. Wide excision of skin prolongs healing time unnecessarily. 6. Greater care is needed in selection of the method of treatment to fit the individual case. The author evaluates closed and open operations and favors the latter. At the Mayo Clinic open types of operations have been employed for many years. The average length of time from operation to a completely healed wound is about thirty days.

Union Médicale du Canada, Montreal

73:105-230 (Feb.) 1944

Oxygen Therapy and Transfusion in Treatment of Respiratory Disorders of Infants. N. Vezina.—p. 110.
Diagnoses Revealed by Direct Endoscopy with Biopsy if Necessary. V. Latraverse.—p. 122.
Instability of Certain Crystalline Astigmatisms. E. Blain.—p. 127.
Tuberculosis of Ear. G. L. Cote.—p. 129.
Nasal Cauterizations. O. Frenette.—p. 135.
*Serotherapy of Whooping Cough. J. P. Beaudet.—p. 137.

Serotherapy of Whooping Cough.—Beaudet had the opportunity to try an antiendotoxin in the treatment of whooping cough. This specific antitoxin is prepared by vaccinating rabbits with a mixture of whooping cough vaccine and whooping cough toxoid. The author observed about 100 cases of whooping cough, and in about half of them he employed the antiendotoxin. Twelve of the children treated were less than 1 year old, 21 were between 1 and 5 years and 19 were 5 years or older. All the patients treated had bacteriologically verified whooping cough. The children were given 10 cc. or 10,000 units of serum into the muscles of the buttocks. In the young infants 5 cc. was injected into each buttock in order to avoid distention of the tissues. The local and general reactions were always mild; a transitory urticaria was observed in 8 cases. Of the children who received the serum during the first week of the paroxysms of coughing, when the average number of paroxysms was ten in twenty-four hours, 53 per cent recovered within fifteen days and 26 per cent in a month, whereas in others there was no improvement and the attacks persisted for seven or eight weeks. In the group of children who were given the serum late, that is, during the third week of the paroxysms, 75 per cent were cured after fifteen days, whereas the other 25 per cent continued to cough for two months. Children who received the serum after having coughed a month continued to do so for more than a month. Other physicians who used the same serum obtained approximately identical results. The author also observed 5 contacts who were given a prophylactic dose of 10 cc.; 3 of these children did not develop whooping cough, but the other 2 developed an unattenuated attack from three to four weeks after the prophylactic serum treatment. This is not surprising in view of the fact that passive immunity conferred by serum is of short duration. The author points out that in view of the polymorphic character of whooping cough it is difficult to evaluate a treatment. In the control group 2 fatal cases of bronchopneumonia developed, whereas in the group receiving the antiendotoxin there was no bronchopneumonia, otitis or any of the other complications of whooping cough. Furthermore, 12 of the patients were infants of less than a year, that is, of an age when whooping cough is particularly grave.

West Virginia Medical Journal, Charleston

40:37-68 (Feb.) 1944

Medical Education in West Virginia. J. V. Liere and G. S. Dodds.—p. 37.
*Herniation of Stomach Through Esophageal Hiatus in Diaphragm: Statistical Analysis of 57 Cases. W. Kay and P. P. Vinson.—p. 46.
Diagnosis and Treatment of Gallbladder Disease. H. C. Myers.—p. 49.

Herniation of Stomach Through Diaphragm.—Kay and Vinson analyze the symptoms and clinical aspects in 57 of 59 patients with esophageal hiatal hernia whom they observed during the past six and one-half years. Forty-five of the patients had hernia of the type associated with shortening of the esophagus. The remaining 14 had hernia of the paraesophageal type. The so-called short esophagus type of diaphragmatic hernia is really not a hernia but a congenital abnormality in which a portion or all of the stomach has developed above the diaphragm. Pain, dysphagia and flatulence are the most frequent symptoms, with bleeding and dyspnea occurring less often. Operative repair is seldom indicated in the so-called short esophagus type of hernia. When dysphagia is a prominent symptom relief can be obtained by passage of dilating sounds into the stomach over a previously swallowed silk thread. Paraesophageal hernia can be repaired by operation with satisfactory functional results. Not all patients with this type of hernia require operation; many may be made comfortable by passage of esophageal sounds, by regulation of the diet and activities and by assumption of the semierect position in sleeping. The esophagus should be investigated before operation for any type of herniation through the esophageal hiatus in the diaphragm.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

17:1-32 (Jan.) 1944

Diagnosis, Classification and Treatment of Tumors of Salivary Glands: Symposium. R. T. Payne, Margaret C. Tod and M. Lederman.—p. 3.
Venous Intravasation During Uterosalpingography. E. R. Williams.—p. 13.
Malignant Tumors of Upper Jaw. B. W. Windeyer.—p. 18.
Ainhum: Case Report. W. S. Shearer.—p. 25.
Time Intensity Factor in X-Ray Irradiation. Edith Paterson.—p. 26.
Salivary Calculus or Tartar: Some Notes on Case and Definition of Term "Salivary Calculus."—p. 31.

British Medical Journal, London

1:33-68 (Jan. 8) 1944

Gunshot Wounds of Head in Acute Stage. H. Cairns.—p. 33.
*Burns and Scalds in Children: Investigation of Their Cause and First Aid Treatment. A. W. Wilkinson.—p. 37.
*Heat in Treatment of Shock. A. W. Kay.—p. 40.
Influenza A: Account of a Minor Epidemic. T. H. Donnelly, H. P. Hughes, D. Robertson and E. Philipp.—p. 42.
Estimation of Hemoglobin by Photoelectric Absorptiometers. J. M. Peterson and D. H. Strangeways.—p. 43.

Burns and Scalds in Children.—Wilkinson reports the burns and scalds in 366 children admitted to the Children's Hospital in Edinburgh. The commonest cause was the upsetting of a cup of tea. The average age in this group was 18 months, and usually the child was being nursed on the lap within easy reach of the tea cup; sometimes the adult was holding both child and cup when the accident occurred. More extensive injuries resulted from the upsetting of kettles (59) or teapots (43): most of these were due to nursing children in close proximity to the table, but a number resulted from the child upsetting a teapot or kettle on a stove or on the floor. Saucepans (63) were often on the floor or, when on a fire or stove, the projecting handle was grasped by the child. The most serious burns were those in which the child's clothes were ignited. This type was most common in girls, often being due to the hem of a nightgown or skirt becoming ignited as the child reached for the mantelpiece or stood too close to an unguarded fire. Some were the result of the child, or other children, playing with matches. An attempt to relate the circumstances of the accident to the home conditions indicated that had accommodation is not so prominent a factor as the domestic habits of the family. In some families more than 1 child had been scalded or burned. Most injuries occurred in the second year of life: 70 per cent of the patients were less than 3 years and 88 per cent less than 5 years of age. The mortality rate was high in the first, fourth and fifth years. The author lists the first aid measures that had been applied. Olive oil was the most frequently used substance, but if a coagulant or other agent in a watery solution or base is subsequently to be used all the oil must be removed from the burn and adjacent skin, involving prolongation of local treatment and increased trauma to the raw surface. Oily and greasy substances do not reduce the loss of plasma from the raw surface, and in some cases their application caused more pain than the initial injury. Various tannic acid jellies were used, but in no case was such treatment properly carried out. Picric acid is still frequently employed in spite of the danger of liver damage which is known to be associated with its use. Patients whose injuries had been covered only with a dry cloth or dressing were in a better state on admission than those with comparable injuries which had been treated with the wealth of the domestic pharmacopeia.

Heat in Treatment of Shock.—Kay investigated on normal subjects the effects of heat as usually applied in shock. Fifteen young adult males were exposed for one hour to the hot air cradle. Intravenous saline solution was administered to 10 of these and intravenous plasma to 5. A progressive rise in pulse rate and venous pressure, together with a progressive fall in arterial blood pressure, was observed in all cases. Symptoms included nausea, vomiting, dehydration, headache, perspiration, muscular pains and exhaustion. In certain cases these were severe. The prolonged use of heat appears to be contraindicated in the treatment of patients suffering from traumatic shock.

Lancet, London

1:73-106 (Jan. 15) 1944

*Hand Infections Treated with Penicillin. M. E. Florey and R. E. O. Williams.—p. 73.
Rehabilitation of Chest Case. F. R. Edwards.—p. 81.
*Some Sensory Effects of Wounds. H. Burrows.—p. 84.
Myelogenous Leukemia Complicating Pernicious Anemia. P. B. Wooley.—p. 85.
Acute Thyrotoxic Bulbar Palsy. L. P. E. Laurent.—p. 87.

Hand Infections Treated with Penicillin.—Florey and Williams chose acute infections of the hand to ascertain the possibilities of using penicillin in acute pyogenic infections. The complicated structure of the hand permitted observations of the effects of penicillin on skin, areolar tissue, blood vessels, nerves, muscles, tendons, synovial membranes of tendon sheaths and joints and bone. A comparative study was made of 212 infections. About half were treated by current methods and the other half by local application of penicillin superimposed on the usual surgical procedures. The great majority of control patients remained septic for well over a week and nearly three fourths were infected till their wounds healed. In the penicillin treated series sepsis was eliminated within a week. Pus was scanty or absent. Relief of pain and throbbing and improvement in the general condition have been striking, and penicillin has effected a great saving in the number of dressings. The mean healing time has been considerably reduced by penicillin, but a few cases have shown undue prolongation of healing. Other factors may have caused this. In bone inflammation penicillin treatment led to rapid rarefaction concurrently with improvement in the clinical condition. Reformation of bone tissue took place readily. The rapid return of mobility to infected parts was one of the most striking features of the penicillin series, but complete normality was not regained after tendon sheaths had contained pus. The dry impure calcium salt may have harmful effects on wound surfaces not protected by granulation tissue. Some patients complained of burning when the dry salt was used. Among chronic cases penicillin proved of value in preparing infected surfaces for skin grafting and infected stumps for amputation and for procuring complete healing in chronic dermatitis. The total amount of penicillin used to treat more than 100 cases was not more than 500,000 units. Complete figures for 35 of the penicillin treated patients showed a saving of about 1,000 man-days of working time as compared with the controls. These results have been obtained by careful attention to technic and consistent twenty-four hourly dressings for a minimum period of five days.

Sensory Effect of Wounds.—Burrows states that sudden severe wounds are at first painless and the recipient cannot always identify with precision the site of his injury. In wartime it is comforting to reflect that severe wounds are always painless until some time has elapsed after their infliction, and that by the timely use of morphine the reactionary pain may be greatly and perhaps entirely prevented. Attention is also called to the reduced sensibility and muscular power in wounded limbs. Wounds of arteries and periarterial tissues in the arm and leg are followed by a reduced appreciation of all cutaneous stimuli and a general muscular weakness in the injured limb. The area of reduced sensibility is of the glove or stocking type and at first may extend above the wound. In the course of days or hours normal sensibility returns, the proximal zones of the limb being the first to recover. Diminished feeling of this kind has some resemblance to the numbness produced by cold and needs similar tests for its recognition. A curious condition follows wounds which traverse the interosseous space of the forearm or penetrate the tissues near its ventral surface. The essential feature seems to be a permanent loss of adaptability in the hand to changes of external temperature. The hand appears slightly swollen; in warm weather it is redder than its fellow and in cooler weather it becomes cyanosed. There has been found a reduced sensitivity of the affected hand with an incapacity for accurate manipulation such as occurs in normal persons when their hands are ischemic with cold. The condition appears to be associated with a paralysis of the small blood vessels of the hand and possibly may be the consequence of sympathetic nerve injury.

Book Notices

A Textbook of Gynæcological Surgery. By Sir Comyns Berkeley, M.A., M.C., M.D., Consulting Gynæcological and Obstetric Surgeon to the Middlesex Hospital and the City of London Lying-in Hospital, London, and Victor Bonney, M.S., M.D., B.Sc., Consulting Gynæcological and Obstetric Surgeon to the Middlesex Hospital. Fourth edition. Cloth. Price, $14. Pp. 912, with 591 illustrations. New York: Paul B. Hoeber, Inc., [1943].

The title indicates the authors' intended purpose of the book. The first chapter is noteworthy. It refers to certain fundamental qualities and characters which every good gynecologist should possess, as for instance "The keystone of the surgeon's bearing should be self control and, while it is his duty to keep a general eye on all that takes place in the operating theater, and without hesitation to correct mistakes, he should be continually on his guard against becoming irritable or losing his temper."

The authors then spend forty-six pages describing instruments, dressings, swabs, suture materials, types of ligatures and knots and drainage. They endorse a strong solution of crystal violet and brilliant green as their first choice for antiseptic solution for both abdominal and vaginal preparations. In the event that violet green or their second choice, flavine, is not available, they would accept Dettol as a substitute. Comments and descriptions of the operating rooms and portable operating tables seem a little strange to most of the gynecologic units in the United States.

The authors have included a moderate number of colored reproductions and a profusion of drawings. The drawings emphasize the steps and pertinent points of the surgical procedure by essential lines and shadings. At first these illustrations appear bizarre and incomplete, yet they are quite adequate for the specialist and are distinctly clear when one becomes accustomed to them. A wholesome and practical philosophy appears often.

In addition to many chapters on the common gynecologic procedures and even the less common ones, a special chapter is devoted to operations on the intestinal canal. A fair consideration is given to the preoperative and postoperative care of the patients. Within the chapter on postoperative complications the "weakest" portion is found under the heading of "General and Local Peritonitis," in which diagnosis and management are disposed of in a scant four pages. Toward the end of the book the authors have listed the data on their gynecologic surgery. One cannot help but be favorably impressed with their good results.

The closing chapter, "Remote Results of Gynecological Operations," is in itself a particularly valuable contribution because it stresses the importance of consideration for the future biologic and physiologic activities of the individual, once a gynecologic surgical procedure is contemplated.

The difficulty of rewriting the fourth edition may be more evident when one considers that it has been revised and published during the peak of destruction and turmoil in the current war period. This edition should have a particular appeal and interest to the gynecologist. Moreover, it represents a most authoritative gynecologic opinion of the British Isles.

Physiology in Aviation. By Chalmers L. Gemmill, B.S., M.D., Commander (MC), U.S.N.R., Associate Professor in Physiology, Johns Hopkins University School of Medicine, Baltimore, Maryland. Cloth. Price, $2. Pp. 129, with 18 illustrations. Springfield, Illinois & Baltimore: Charles C Thomas, 1943.

Commander Gemmill's book presents a concise outline of the present status of aviation medicine from a physiologic point of view and is written in such a way that it is of value not only to flight surgeons but to aviators as well. The changes which a normal person must undergo in flying, such as acceleration, possible anoxia, fatigue, cold, vibration, fear and combat, and the changes in man's internal environment which are made to meet these conditions, are well outlined. In reviewing the composition, pressure and temperature of the air in which man flies, the importance of remembering that altitudes must be expressed as pressure altitudes is stressed—that is, the actual altitude that the altimeter indicates, since the reaction of the body depends on this altitude rather than on a corrected altitude, which takes into account changes in temperature. The mechanics of respiration, gas laws and their application, properties and composition of the alveolar air and the various factors affecting this composition, the carriage of oxygen and carbon dioxide by the blood and the control of respiration—all these are fundamental factors which must be thoroughly understood by all flight surgeons. The acute and chronic effects of anoxia, aeroembolism, and a full description of various types of apparatus used in supplying oxygen to aviators are of equal importance to fliers and flight surgeons, as are the effects of acceleration on man. It is emphasized that the normal means of regulation of temperature of the body are inadequate to meet the extreme cold of high altitude, which means that either heated suits or rather bulky clothing must be worn. Lieut. Frederick B. Lee, in a chapter on instrument flight, points out the requirement for the development of entirely new reflexes on the part of the pilot doing instrument flying, and the fact that all sensations from the inner ear and deep sensibility are useless in aiding the pilot to control the airplane and must be completely disregarded in order to place complete reliance on the visual indications of the instruments.

Synopsis of Obstetrics. By Jennings C. Litzenberg, B.Sc., M.D., F.A.C.S. Second edition. Fabrikoid. Price, $5. Pp. 405, with 157 illustrations. St. Louis: C. V. Mosby Company, 1943.

In the present edition the author has included new data which have been presented during the last three years. Among the new subjects discussed are erythroblastosis and caudal anesthesia. As in the previous edition, few of the illustrations are original. Nearly all were copied from other textbooks, many from a book on nursing. Likewise, as in the first edition, the author gives sound and practical advice all through the book. The reviewer questions the real value of most synopses, because they attempt to cover an entire subject in necessarily sketchy form. However, Litzenberg's extensive experience as a teacher makes this book a real contribution. Nevertheless, as he himself says, "the Synopsis is not designed as a substitute for more elaborate works but as a syllabus of obstetric knowledge and practice." When used with one of the standard textbooks of obstetrics, this synopsis should prove to be most helpful.

Vólvulo del estomago: Estudio clínico y radiológico. Por los doctores Prof. Dr. Carlos Bonorino Udaondo, director del Dispensario nacional para enfermedades del aparato digestivo, Buenos Aires, y Prof. Dr. Pedro A. Maissa, profesor adjunto de la Facultad de medicina, jefe del Servicio central de radiología y fisioterapia del Hospital Ramos Mejía, Buenos Aires. Paper. Pp. 176, with 47 illustrations. Buenos Aires: Aniceto Lopez, editor, 1943.

A masterly chemical and radiologic subject profusely illustrated. The authors, both professors at the University of Buenos Aires, prove in this monograph the high standards of Argentine surgery. The volume should certainly integrate any up to date surgical library.

Tomas de Aquino y la psicopatologia: Contribución al conocimiento de la psiquiatria medieval. Por el Dr. E. Eduardo Krapf. 2, Monografias de "Index de Neurologia y Psiquiatria," publicadas por R. Orlando. Paper. Pp. 43. Buenos Aires: Editorial Index, 1943.

An interesting analysis of the sources of some modern trends in psychology, several of which can be traced back to Aquinas's philosophy. As the author states, the monograph is really a contribution to medieval psychiatry.

Medical Parasitology: A Laboratory Manual. By I. Jacques Yetwin, B.Sc., M.S., M.D., Medical Technologist, American Society of Clinical Pathologists. Fourth edition. Cloth. Price, $3. Pp. 126, with 127 illustrations. Waltham, Massachusetts: The Author, 1944.

A condensed outline of a fifteen weeks course of thirty lectures covering the common parasites and venomous animals.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

BLOOD TESTS RELIABLE FOR SUSPECTED EXCHANGE OF INFANTS

To the Editor:—A relative had his baby boy born in a hospital the same day as another of about the same size and appearance. The nurses used no markings and the mothers heard them wondering if they had not exchanged the babies. The parents are much upset and took the babies, who are now a month old, to St. Louis for tests but were told it is too early before 4 months. They appeal to me about this matter. Can you give me some information, including medicolegal aspects, as well as type and reliability of tests?

M.D., Illinois.

ANSWER.—Blood tests furnish a reliable method of solving instances of suspected interchange of infants, such as the case described in the inquiry. It is not necessary to wait until the babies are 4 months old, because if suitable potent reagents are used the types can be determined accurately at birth. The tests now used routinely include the four standard blood groups and the three M-N types. These tests operate by exclusion so that, if it can be shown that one pair of parents cannot be the parents of one of the two infants, then by exclusion the other infant must be theirs. The four blood groups O, A, B and AB are inherited according to the following laws: 1. Agglutinogens A and B cannot appear in the blood of a child unless present in one or both parents. 2. Group AB parents cannot have group O children, and group O parents cannot have group AB children. The types M, N and MN are inherited under the following laws: 1. Agglutinogens M and N cannot appear in the blood of a child unless present in one or both parents. 2. Type M parents cannot have type N children, and type N parents cannot have type M children. In 1930 in Chicago a hospital case such as that described in the inquiry was solved with the aid of the four blood groups. The chances of solving such cases by the four blood groups is about 40 per cent; when tests for M-N are also made, about two thirds of the cases can be solved.

Some cases which are not solved by tests for A-B and M-N may now be solved with the aid of tests for the subgroups of A, the secreting factor, and/or the seven known Rh types. Tests for the subgroups of A offer some difficulties in newborn infants unless very potent serums are used, but after the first month the subgroups are easy to determine. Where neither parent belongs to subgroup A_1 or A_1B, none of the children can belong to these subgroups; moreover, parents of subgroup A_1B cannot have children of subgroup A_2, and A_2 parents cannot have A_1B children. Tests for the secreting factor are reliably carried out only when the individuals involved do not belong to group O. About 85 per cent of all individuals are secretors, so that their groups can be determined by tests on their saliva. If neither parent is a secretor—a rare case—none of the children will be secretors. The heredity of the Rh blood types is more complicated and is discussed in detail in a recent paper (Wiener, A. S.; Sonn, E. B., and Belkin, R. B.: Heredity of the Rh Blood Types, *J. Exper. Med.* **79**:235 [March] 1944).

References:

Wiener, A. S.: Blood Groups and Transfusion, ed. 3, Springfield, Ill., Charles C Thomas, 1943.

Schiff, F., and Boyd, W. C.: Blood Grouping Technic, New York, Interscience Publishers, Inc., 1942.

Harley, D.: Medicolegal Blood Group Determination, London, William Heinemann, Ltd., 1943.

CASHEW NUT OIL

To the Editor:—Will you kindly send me information regarding the effects of oxydized cashew nut oil on man. Is there any systemic effect following the inhalation of fumes of this oil or after direct contact with the skin?

Lyman Weeks Crossman, M.D., New York.

ANSWER.—All cashew nut oil as used presumably is oxidized to some extent. This substance is both an antigen and a primary skin irritant. It is reported to induce systemic manifestations after absorption, of which headache is the first feature. White states that the "Oriental cashew" is called the "Indian marking nut." He associates with it both skin blackening and the causation of skin irritation. This was confirmed by Goldsmith in THE JOURNAL, Sept. 4, 1943, in an article entitled "Dermatitis from Semecarpus Anacardium (Bhilawanol or the Marking Nut)." Neubauer (*Zentralbl. f. Gewerbehyg.* **3**:189 [July] 1926) minutely describes the cashew nut and states that it contains 10 per cent cardol, which he regards as the irritant ingredient. This author says "Cardol is taken up in the blood circulation and has a toxic effect. This explains the headache among workers with vanilla and the dermatitis sometimes encountered among laundry workers owing to the marking ink being made from cashew nuts. They may cause external as well as internal maladies, and, should their use become more extensive, steps must be taken to guard against their ill effects." On the other hand, Goldsmith denies the presence of cardol, anacardic acid, catechol or anacardol. However, he did find a monohydroxyphenol and a dihydroxy compound, $C_{21}H_{32}O_2$. He also notes that European physicians of repute have administered this oil internally with alleged benefits in asthma, rheumatism and certain organic neuropathies.

An outbreak of dermatitis due to cashew nut oil contained in a varnish has been recently reported (Lockey, S. D.: Cashew Nut Oil Dermatitis, *Annals of Allergy* **2**:22 [Jan.-Feb.] 1944). Lockey stated that persons with an allergic background should not handle varnish that has a cashew nut oil base, although some who are mildly sensitive to the oil who persist in using it may become "hardened" to it.

INJURY OF INTERVERTEBRAL DISK FROM SPINAL PUNCTURE NEEDLE

To the Editor:—A youth aged 20 was operated on under spinal anesthesia for fistula of the anus. The postoperative course was uneventful until the patient became ambulatory two weeks later, at which time he complained of severe lower back pain. Neurologic and x-ray examinations three weeks after operation were negative. However, x-ray examination five weeks after operation showed a narrowing of the intervertebral disk opposite the site of the spinal puncture. Can a spinal puncture, even assuming faulty technic, cause a rupture of the intervertebral disk? Will a puncture with a 20 gage needle permit the material surrounding the nucleus pulposus to extrude? If so what symptoms, signs and x-ray findings may be expected from this? Is there any published work on the occurrence of ruptured intervertebral disk following spinal puncture? Are there many cases on record of spinal injury following spinal puncture?

Captain (MC), U.S.N.

ANSWER.—Intervertebral disks may be injured by the spinal puncture needle, and this injury occurs more often than is generally recognized. The fibers of the annulus fibrosus which form the posterior portion of the intervertebral disk capsule are extremely thin in the location most likely to be reached by the needle. If these fibers are punctured and a few of them cut by the sharp edge of the needle, the nucleus pulposus material which is under pressure may gradually be extruded, and in so doing the opening enlarged until a considerable amount of the disk is displaced into the extradural space. If any reasonable amount of the material is thus extruded, there will be narrowing of the disk space as demonstrated in the x-ray film and there may be pain from impingement of the extruded disk material against a posterior nerve root.

The first and most complete description of injuries of the intervertebral disk as the result of spinal puncture was by Charles N. Pease of Chicago, entitled "Injuries to the Vertebrae and Intervertebral Disks Following Lumbar Puncture" (*Am. J. Dis. Child.* **49**:849 [April] 1935).

PARALYSIS OF OCULAR MUSCLE FROM STAB WOUND

To the Editor:—A patient was injured by a stab wound near the parotid gland, resulting in paralysis of the orbicularis oculi muscle of the left eye. No other paralyses were apparent. The left eye is kept closed by elevating the lower lid with adhesive tape. What should be the further treatment?

M.D., Michigan.

ANSWER.—It is unlikely that the small branch of the facial nerve which was divided in this case could be found and the ends approximated. The most satisfactory treatment in this case would probably be a plastic operation on the eyelids such as insertion of a fascial transplant. For this procedure the patient should be referred to some plastic surgeon.

ABDOMINAL PAIN AND TENDERNESS

To the Editor:—Under the heading "Tender Abdominal Aorta in Middle Age" in the Feb. 26, 1944 issue of The Journal, Dr. Joyce describes a condition which I have seen on some occasions. The complaint is solely that of abdominal pain. This pain is of a persistent and pulsating character. Tenderness is localized over the abdominal aorta. One patient, a Negro woman about 40 years of age, had a history of migraine headaches; another patient, a white man aged 70, had a history of bronchial asthma. This gives me the impression that patients manifesting this symptomatology represent manifestations of allergy or so-called abdominal migraine. Both of these cases were relieved by the administration of ergotamine tartrate 1/320 grain (0.2 mg.) at repeated intervals. This condition lasts two or three days, after which the abdominal pain disappears.

Harold N. Perelson, M.D., Huntington Park, Calif.